Commerce

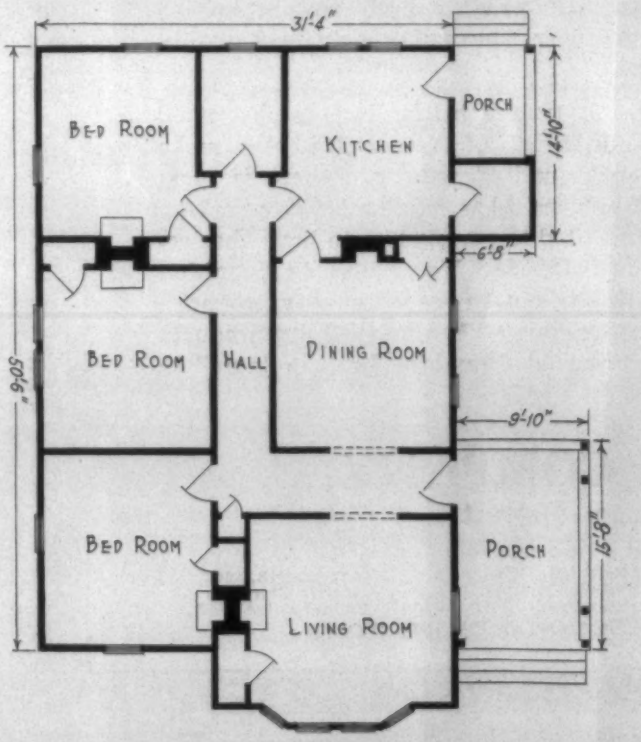
SOUTHERN TEXTILE BULLETIN

VOL. 28 CHARLOTTE, N. C., THURSDAY, APRIL 23, 1925 NUMBER 8

Type of Minter Home in the village of the new Southern Worsted Corp., Greenville, S. C.

Lockwood, Greene & Co. Boston, Mass., Engrs.

The Minter way is the modern way. We offer textile mills a complete contract blanketing the erection of employes' cottages, schools, community houses, churches, etc. Your architect's plans or your own plans can be Minterized with ease. Our complete contract appeals to textile mill executives. We can save executives' time and stockholders' money. We are able at present to give prompt delivery on all types of Minter Homes and handle their erection with our own experienced foremen and labor.



Floor Plan of Employee's Cottage in Village of Southern Worsted Corp.

You Get Action

Most delays on construction contracts can be avoided by careful advance planning. Our business is systematized. We can give you action on housing contracts entrusted to us. Your houses will be ready for occupancy when promised. It is significant that the people who are most familiar with Minter Homes buy most of them. In the City of Greenville and its suburbs, we can point to 778 Minter Homes of all types erected in a little over two years for the people who know most about the Minter System of Building and the prompt erection service we give on our contracts.

We want to quote on the houses you need.

The Minter Homes Co.

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Minter Homes Corp.

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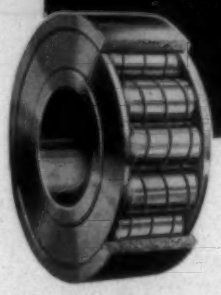

Crompton and Knowles looms in mills of Cheney Bros., South Manchester, Conn. Hyatt roller bearings on crank, cam and rocker shafts.

Better Looms
Bring Bigger Return On Investment

IN this day of competition and high production costs, the success of every mill depends largely upon the type and condition of its equipment. Consider the looms in your weave shed. Are they as modern and efficient as they should be to meet the demands of present day methods?

Looms purchased now must possess the stamina and quality to insure years of dependable and uninterrupted service if maximum production is to be maintained and production costs kept at a minimum.

Unless their bearings are right, looms cannot perform in the most efficient and satisfactory manner. Destructive friction and consequent wear and looseness must be removed as a first essential. Hyatt roller bearings have proved themselves able to meet the requirements by more than eleven years of satisfactory loom service. They provide the easy rolling action of steel rollers coupled with the rugged strength and long wearing quality of the highest grade materials and sound construction.

Their use results in easier running looms, and the reduction of bearing wear to a negligible item. The result is high quality performance steadily maintained, plus substantial savings in power, lubrication and maintenance expense. Hyatt bearings require no "running in". They operate smoothly from the start and continue to do so for many years because wear is practically eliminated when the bearings are manufactured; all Hyatt bearings operate alike. This means increased production, lower production costs and a greater return on the loom investment.

Specify Hyatt equipped looms or write us for further information. It is a sure means of placing your weave room on a more efficient basis.

Write for a copy of the Hyatt Textile Bulletin. It contains 50 pages of interesting information on the application of these bearings to looms and other textile machinery.

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HYATT ROLLER BEARINGS FOR TEXTILE MACHINERY

SOUTHERN
TEXTILE BULLETIN

PUBLISHED EVERY THURSDAY BY CLARK PUBLISHING COMPANY, 39-41 S. CHURCH STREET, CHARLOTTE, N. C. SUBSCRIPTION $2.00 PER YEAR IN ADVANCE. ENTERED AS SECOND CLASS MAIL MATTER MARCH 2, 1911, AT POSTOFFICE, CHARLOTTE, N. C., UNDER ACT OF CONGRESS, MAR. 3, 1879.

VOLUME 28 | CHARLOTTE, N. C., THURSDAY, APRIL 23, 1925 | NUMBER 8

Meeting of the Weaver's Division

THE meeting of the Weavers' Division of the Southern Textile Association, was called to order at 10 a. m., Wednesday, April 15th, at Anderson, S. C., by Chairman L. L. Brown.

Mr. Brown explained that he had placed the Weavers' meeting at Anderson without waiting for an invitation, because he knew the Anderson men would be glad to have the meeting, and had given us a splendid meeting two years ago. Mr. Brown also stated that the morning session would be devoted entirely to the subject of "Economy in Weave Rooms," and introduced W. H. Gibson, Jr., of Union, S. C., former chairman of the Weavers' Division, who made a very interesting talk on "Waste in Weave Rooms."

Mr. Gibson stated that many men had a habit of doing things over and over again the same way without trying to discover new and better ways, but that he had been working on the question of saving waste in the weave rooms, and he had been able to obtain good results.

He stated that the best results had been obtained from the use of gummed tape on the slashers. He stated that he put on two strips just before the cut mark and then put on another strip a yard further, which would not only keep the warp straight for the last yard, but acted as a guide to the loom fixers and a check to prevent the warp being cut off earlier than necessary.

He found this system reduces waste a great deal. Mr. Gibson said he calculated every week how much waste cost the mill and on any new system he calculated whether or not the system cost more than the value of the waste saved. He said that the gummed tape was found to make great savings at the tying-in machine. In fact, for his own mill, it was found that the use of gummed tape in reducing waste amounted to $18.00 per day.

On this subject of reducing filling waste, Mr. Gibson said he had to go back into the spinning room and get the doffers to do socket piecing. He said that this caused a great deal of trouble at first, but was now adopted and was found to save a great deal of waste. He also changed the length of the traverse and also the speed of same in one direction.

He said that at the present time, his filling waste on looms without feelers, including bobbins on floor, amounted to .23 of 1 per cent; with feelers, this was increased about ½ of 1 per cent. He cautioned the weavers, however, to remember that his figures were from one special mill and did not apply to any other weaves.

Mr. Gibson had run a test on 104 looms to determine the waste from battery ends and found it averaged one-half a pound per day.

He also had made special tests to determine the sources of weave room waste and found the greatest cause of weave room waste was from filling sluffing off and also found that a big per cent of the seconds came from the same cause. He had filling made with longer stroke and extra power put on the looms and greatly reduced the amount of waste and seconds.

Mr. Gibson said he also tabulated the defect in a considerable amount of cloth and found that sluffed filling and thin places caused 90 per cent of the seconds.

In conclusion he stated that when he had troubles he always made a business of asking the machinery men, the textile papers, or some mill men, it being his rule "If you don't know, ask somebody."

D. W. League asked Mr. Gibson what kind of spindle drive produces the sluffed filling, and Mr. Gibson said he had a band drive.

W. B. Williams wanted to know if Mr. Gibson had entirely discarded the sticks on loom beams and was now using only paper?

Mr. Gibson said, Yes.

Mr. Williams asked what per cent ran out within one yard.

Mr. Gibson said 90 per cent.

W. B. Williams stated that some mills were at a disadvantage, because of lack of floor space, which required them to pile the section beams and loom beams and that a certain amount of waste was made in lifting these beams off and on the other beams. He said that in slashing he used sticks on 44x40 and 80x80 goods. He said that his mill made a practice of carrying all the dirty and oily filling to one loom and weaving it into cloth, which, of course, was sold as seconds. He said his thread waste was one-half of 1 per cent.

A. R. Gossett asked if he was using feelers?

Mr. Williams said he had feelers on 64 looms, and his yarn numbers were 30s warp and 37s to 41s filling.

H. O. Rogers asked how much waste was left on section beam on the slasher?

Williams said he did not know, but that he gave that to the spinner. (Laughter.)

A member wanted to know how much waste was made per loom, but Williams said he did not have the figures.

Dan Beacham wanted to know how he figured his percentage.

Williams said he based his figures on the total cloth produced and the waste made.

J. L. Bobo wanted to know if he cleaned the quills in the weave room or spinning room.

Williams said he cleaned part in each room, and the quill waste cleaned in the spinning room was not counted as part of the filling room waste. He also said he did not separate the warp and filling waste.

D. W. League was called on but had no figures on hard waste, but on the general subject of weave room waste, he said that the place to start was in the slasher room. He said that he kept after his room waste daily, and that he considered the overseer more of a teacher than anything else; that people could not be driven but could be taught, and said that he considered it better to tell the weavers and filling carriers the necessity of picking up the quills from the floor than to post notices on a board, as most of them would not pay attention to notices. He found that everybody had to be watched and encouraged to save warp waste, and said that men with nothing to do frequently sat down on the spare warps and caused tangled ends and waste.

Chairman Brown asked how many in the room used slasher tape.

A show of hands indicated about 75 per cent there used tape.

The next question under consideration was: "What is a reasonable supply bill per week on 100 automatic looms expressed in dollars and cents?"

R. B. Burham said that his cost on 72 looms, not including belts and crank shafts, was $22 per month, running day only. He had looms of many ages and operates 34 to 56 picks, with yarns heavier than printed cloth numbers. He said his cost included shuttles.

G. B. Hamby, of Abbeville, S. C., said his cost was $20 per month on 80 looms. He had 40-inch E Model that ran as low as $12 per month per section, which price included belting but not crank shafts.

J. B. Mitchell also operates 40-inch E Model looms about twenty-five years old at a cost of about $5.75 per loom per year, which included everything, even the freight on supplies.

Mr. Williams, of the Draper Company, said the cost depended, to a large extent, upon the type of loom and the class of goods made.

R. B. Burham said that his cost given above did not include reeds and harness, because these were changed frequently.

J. A. Chapman, Jr., said that on a 55-hour basis the supplies for one loom cost $3.70 per loom per year.

H. O .Rogers had an average cost of $36 per month per 100 looms on 44x40 and 48x40 goods.

In response to an inquiry by Chairman Brown about twenty of those present reported that they were keeping cost records on loom supplies.

E. A. Franks, superintendent of the Drayton Mills, Spartanburg, was next called on for a talk on belting and strapping. He wanted to know how many were using two-inch single belting and about twenty held up their hands.

Mr. Franks said that loom belts kept in good condition last twice as long as others, and that belts need more attention in weave rooms than elsewhere. He said they should be cleaned once per week and that dressing should be applied on the back of the belt at least once per month. He advised against putting any dressing on the face of the belt, and said it was very important to keep the belts in good pliable condition. He also said that humidity in the weave room caused a great deal of fly and lint to catch on inside of the belt. Loom shaft harness and strapping should have a little oil occasionally, for if the straps are left untreated, they will not last long. He emphasized the fact that many loom fixers do not properly set the heel straps and that if the heel strap is used to check, it will not last long. Let the check strap do its own work. If the looms are not in line with the shaft or not leved, the driving belts

(Continued on Page 20)

Development of the Spinning Frame

By Robert E. Naumburg, Head of Research Dept. Saco-Lowell Shops.
Paper Presented Before American Society of Chemical Engineers.

THERE are few industries which were developed as highly as the textile industry at such an early period, and then remained practically stationary for several thousand years. There are few industries, which after transmission from generation to generation, without improvement, for centuries, have been

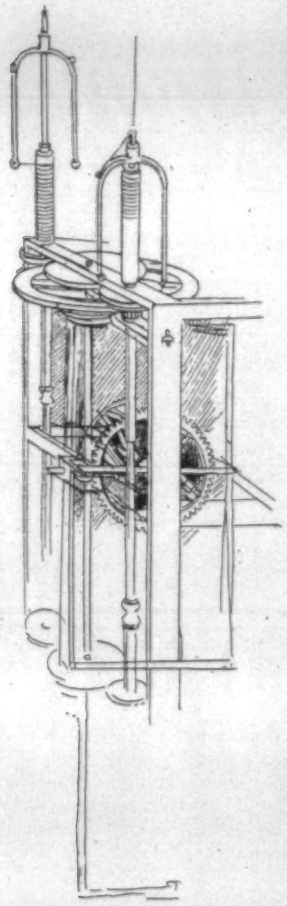


Fig. 1 Sketch of a Spinning Wheel Invented by Leonardo da Vinici

completely revolutionized within a lifetime. Now, after less than two centuries of development — from 1738 to the present day—in which machinery has steadily replaced hand labor, a stage of remarkable perfection has been reached. Nevertheless there are many who believe that the textile industry is about to take another step forward.

The spinning frame in its early form—that of the spinning wheel—is very old, having been used in the Orient for 3000 years and having been introduced into Europe between the 14th and 16th centuries. It remained in the form of a crude, primitive device till much later, although in Figure 1 we see an interesting invention by the versatile Leonardo da Vinci that anticipates many modern features. This will be discussed more fully later.

One of the first U. S. patents on a spinning wheel was granted to H. Wilson in 1818. In Figure 2 is shown the application to the threadle wheel with crank and connecting rod ,allowing the use of both hands for spinning. This principle made possible the use of two spindles on a spinning wheel, operated simultaneously by one person, and was therefore a great improvement over primitive forms. This is the highest number of spindles per operative ever attained on the spinning wheel.

The first patent on a spinning frame with more than two spindles per operative was granted to Richard Arkwright, of Nottingham, England, in 1769. His patent (figure 3) shows four spindles to a machine, all of the spindles being located on one side of the frame. The power to drive Arkwright's machine was originally furnished by a horse. Later, he used water power and his frame became known as a "water frame." Although "water" has been dropped from modern English nomenclature, we still use the term "frame" in connection with spinning machinery. In the Russian language, the opposite is true. The successor to the "water "frame is called a "water," regardless of the motive power employed. A ring spinning frame in Russia is called a ring water." Machines like Arkwright's were also known as "throstles" and "jack frame."

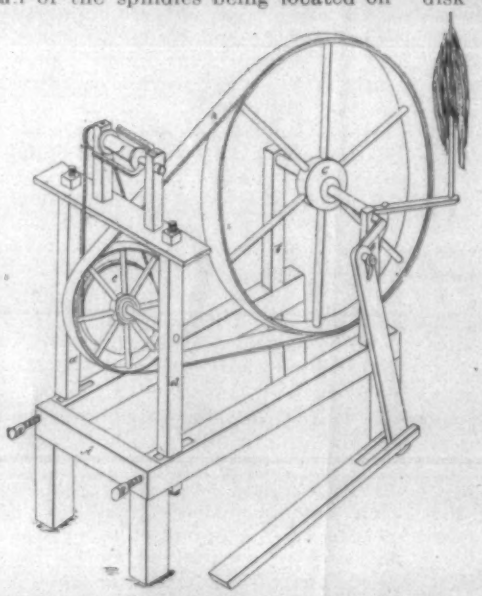


Fig. 2 Early U. S. Patent Showing Application of Treadle to Spinning Wheel, 1818.

Another interesting point in regard to the nomenclature of the art, is the term "crown gear" as applied to a spur gear which drives the back rolls of a modern spinning frame. Referring to Arkwright's drawing in figure 3 it will be seen that the wheel H which drives the drawing rolls is actually a crown gear, that is, a gear made up of a disk with pins inserted around its circumference. Although the construction has long since been changed, the "crown gear" of Arkwright's survives in the nomenclature of the spinning frame of today.

James Hargraves, also of Nottongham, England, obtained a British patent on his "spinning jenney" in 1770. In his specification he claimed a wheel or engine which would spin, draw, and twist sixteen or more threads at one time by a turn or motion of one hand and a draw of the other. Unlike Arkwright, Hargrave did not limit himself to a definite number of spindles. In addition to applying the principle of the spinning wheel to a large number of spindles, he introduced a reciprocating motion of the spindles to and from the point where the cotton was delivered. He did not use drawing rollers, but employed spindle draft to draw out the thread to the required fineness.

The mule was invented by Samuel Crompton between 1779 and 1779, but was not patented by him. It present day spinning frames. It is interesting to note in figure 3 the drawing rolls and their group of four spindles driven by a belt; the

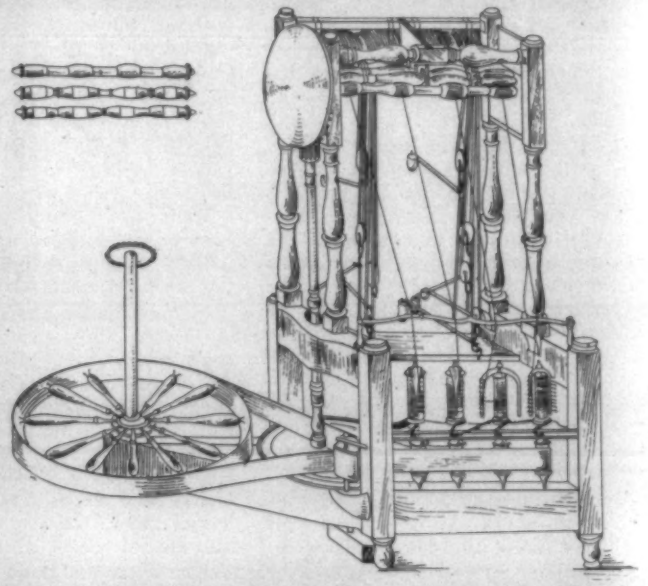


Figure 3 Arkwright's Patent Showing the First Spinning Frame With More Than Two Spindles per Operative, 1769.

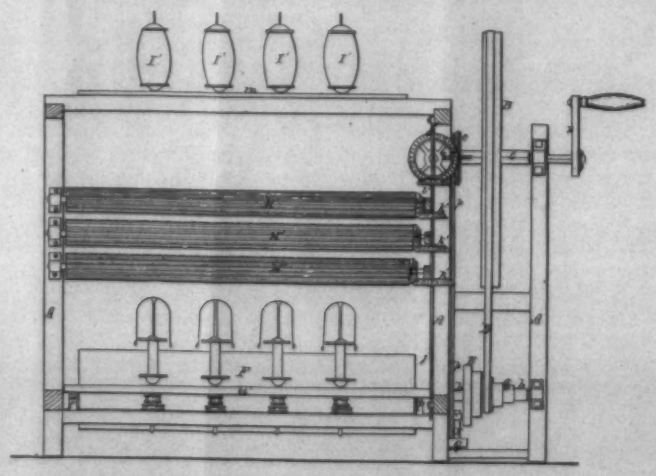


Figure 4 Paddleford's Spinning Frame, 1816.

framework as a whole and the two rails which support the spindles; was called a "mule," not on account of the source of power to drive it, but because it was a cross between a "jack" frame and a "jenney." The mule combined the drafting rolls used by Arkwright with the reciprocating carriage invented by Hargraves. Both the jenney and the mule were intermittent and they alternately twisted and wound the yarn on to the bobbin.

Arkwright's spinning or water frame, on the other hand, was practically continuous, and he is justly known as the inventor of the first successful continuous-process, power driven spinning frame.

Early Spinning Frames.

The general arrangement of Arkwright's frame of 155 years ago, bears a close resmblance to the the rod which serves as a thread board; and the complicated system of weighting the top rolls which accomplishes the same results at attained on a modern frame. The bobbin is not positively driven but is dragged around by the yarn. The friction or drag which causes the bobbin to lag behind the flier is furnished by a worsted band which is TWO—D evelopment of the spinnin not allowed to revolve. This is similar in principle to the leather washer on the present system of "open drawing" used on worsted flier spin-

ning and roving frames, which have no cones or differential motion.

Many different designs of spinning and roving frames were attempts in the years immediately following Arkwright, but there are few general designs, if any, which have been proposed in recent years which were not anticipated many years ago.

P. Paddleford, of Layman, N. H., in 1816 used three pairs of rolls, all positively driven, as shown in figure 4. He obtained a variety of speeds by shifting his belt on the cone pulley. Paddleford used a flier, but unlike Arkwright's water frame of 1769, he had an automatic traverse.

A patent granted to W. P. Brayton, of New York City, in 1836 figure 5, shows a series of vertical cylinders from which separate bands were connected to each spindle and to each flier. The spindle were of the old type supported by two rails, which gave ample distance vertically for pulleys ot different heights.

In contrast to the patent to Brayton, which had one band for each spindle, is the patent granted in 1855, to J. Morse, of Woonsocket, R. I. (figure 6). This shows an endless belt drive, and was an early attempt to drive all the spindles of a frame with a continuous band, using only one take-up pulley. A disadvantage of this construction is that if the band breaks, a large number of spindles are rendered idle and a good deal of time is consumed in rethreading the band around the spindles. Various forms of continuous-band drives have been tried in recent years, including steel belts as well as leather belts, woven tapes, and rope drives. The continuous-belt drive is used today on the silk spinner where the load is very light.

In 1830 a patent was granted to S. P. Mason, of Kilingly Conn. (figure 7). This showed the long fliers, arranged horizontally in a jute machinery employing large fliers.

In 1844 a patent was granted to F. McCully, Jr., of Preston, N. J., for a machine (figure 8) in which a series of beveled wheels drove the individual spindles by friction. This construction made it possible to stop any spindle by lifting a lever, which raised the spindle out of contact with the driving wheel. This type of drive is used on silk spinning and spooling machines of the present day.

In 1845 a patent was granted to B. Brundred, also of Paterson, N. J. (figure 9) on a circular spinning frame with six sets of rolls, driven by an elaborate series of bevel gears. This shows to what extremes the inventors of this period went in their attempts to improve the general design. The circular principle has frequently been attempted in textile machines—the most successful, perhaps, being the Noble comber, and the knitting machines.

A later development was the ring spinning frame with the stationary ring rail and the traversing spindle rail. This was first patented by Thomas Mayor, of Providence, R. I., in 1876 (figure 10). He mounted the whirl on a spline so that it remained at the same height while the spindle and bobbin traversed. The chief advantage of a stationary ring rail is that the distance between the thread eye and the spinning ring remains contant. Hence the balloon remains constant, and this tends to make a more even yarn. In the case of cap spinning or flier spinning the same result is obtained. The cap or flier remains at a constant level and the stationary ring rails. Those now in use include the Pease frames for spinning woolen yarns, built by the Whitin Machine Works, and the cotton spinning frames built by Potter and Johnston.

As far back as 1830 a patent was granted to Charles Danforth, of Paterson, N. J., for a cap spinning frame, which became known as the

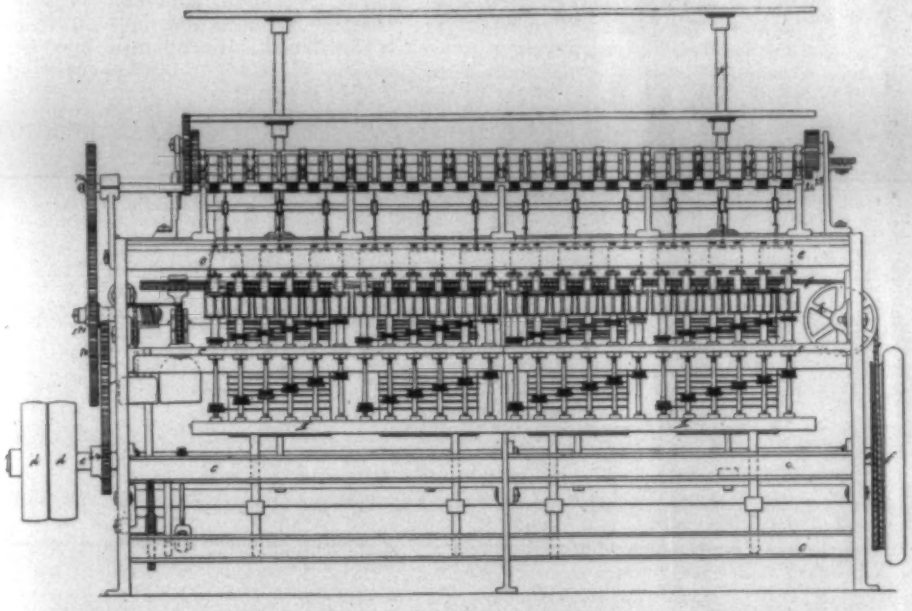


Figure 5 Brayton's Spinning Machine With Vertical Cylinders, 1836.

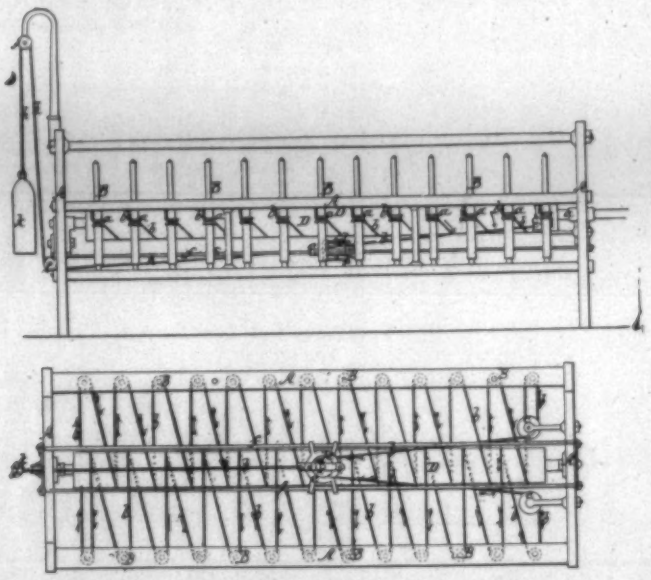


Figure 6 Morse's Patent, 1855, Showing an Early Attempt to Drive Many Spindles With a Continuous Band.

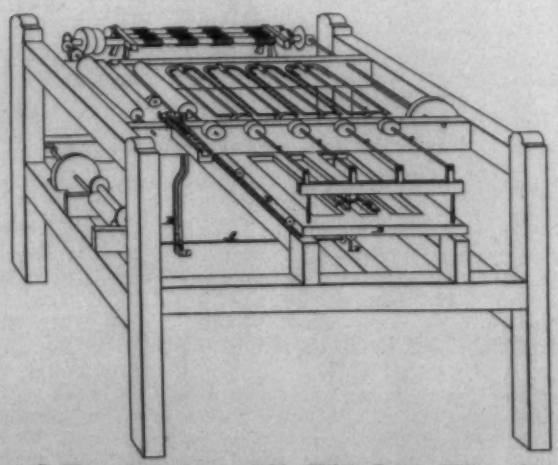


Figure 7 Mason's Patent, 1830, With Long Fliers Arranged Horizontally in a Frame.

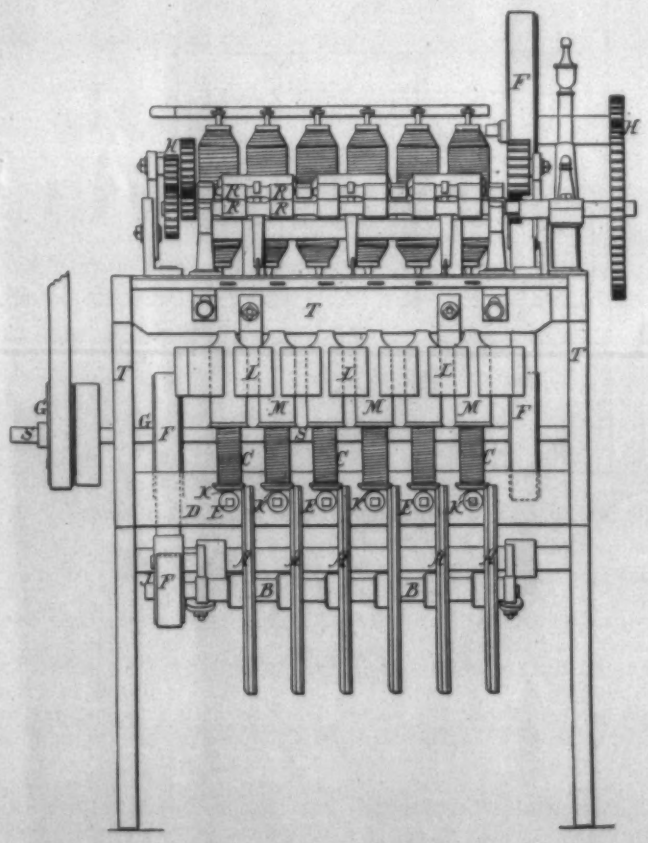


Figure 8 McCulley's Patent, 1844, in Which Any Spindle Could Be Taken Out of Contact With The Driving Wheel.

"Danforth frame" (figure 11). This approached the modern frames in length and number of spindles, and resembled the cotton spinning frame of the present day in the creel which held the roving, the roll stands, and the thread board, with individual thread eyes, and the worsted spinning frame of the present inedr, the traversing lifter plate, day in the spindles, the driving cyl- and finally in the crap itself.

One of the most important features in the mechanical handling of textile fibers is the employment of drawing rolls. The drafting of the fibers, which had formerly been done by human fingers in spinning, could now be done by machinery. It is with this invention that the successful development of the modern spinning frame may be said to have begun. Drawing or spinning rolls were the invention of John Wyatt,* of Litchfield, England, and his partner, Lewis Paul, of Birmingham, but the British patent, which was granted in 1738 bears the name of Lewis Paul only.

This patent contains no illustrations, but its language is as clear as its spelling is quaint. The patent is called "A New Invented Machine or Engine for the Spinning of Wool and Cotton." Lewis Paul describes the drawing rolls as follows

"The wool or cotton being thus prepared, one end of the mass, rope, thread or sliver, is put betwixt a pair of rowlers, cillinders, or cones, or some such movements, which being turned round by their motion draws in the raw mass of wooll or cotton to be spun in proportion to the velocity given to such rowlers, cillinders, or cones. As the prepared mass passes regularly through or betwixt these rowlers, cillinders, or cones, a succession of other rowlers, cillinders, or cones, moving proportionably faster than the first, draw the rope, thread, or sliver onto any degree of fineness which may be required."

Thirty-one years later, Arkwright used drawing rolls on his water frame. Arkwright is often given credit for originating the drawing rolls. This impression may have been caused by the familiar picture of Arkwright seated beside a table on which is a model rollstand with drawing rolls.

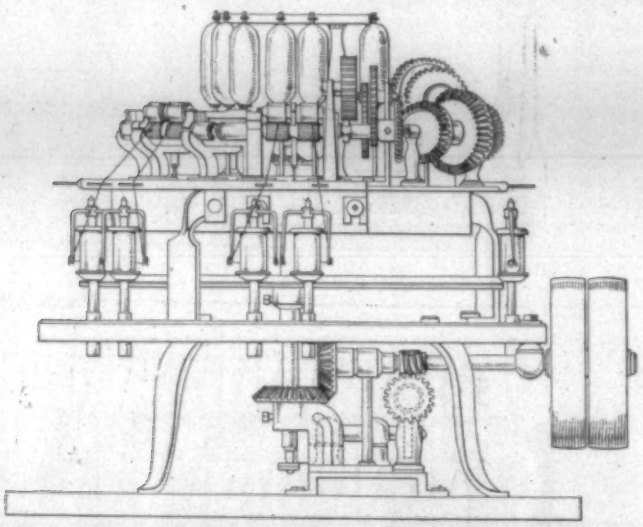
Lewis Paul does not mention of what material his drawing rolls were made, and whether they were covered or not. But Arkwright states in his specification that "that part of the roller which the cotton runs through is covered with wood, the top roller with leather and the bottom one fluted." Although wood has been dispensed with in the construction of drawing rolls, leather-covered top rolls and fluted bottom rolls are still employed on modern spinning frames.

The first United States patent (of which we have any knowledge) showing a covered top roll was granted to Daniel R. Pratt, of Worcester, Mass., in 1848. His roll, which had two bosses, is not very different from that in use today.

The problem of making drawing rolls in sections is one which increased in importance as the spinning frames and drawing rolls increased in length. As a matter of construction, short sections are preferable to long sections. They are easier to handle ,and can be more accurately fluted and more uniformly hardened. In the mill they are easier to handle, and in case of breakage only a short section need be replaced.

The first patent which we have been able to find showing a joint for the rolls of a spinning frame was granted in England to John Welch, "Cotton Mill Roll Maker," in 1816 (figure 12). The present styles of roll couplings are refinements based on this idea.

Fliers are the spinning elements used by Arkwright. Neither the cap nor ring had been invented up to his time. (Continued Next Week)



Fgure 9 Brundred's Circular Spinning Frame, 1845.

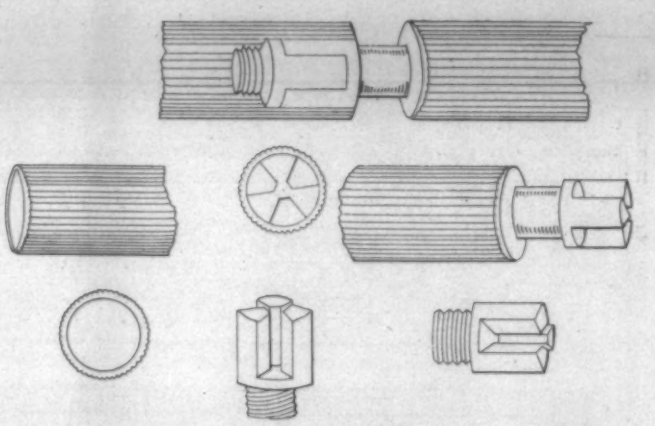


Figure 12 First Patent Showing a Joint for the Rolls of a Spinning Frame, 1816.

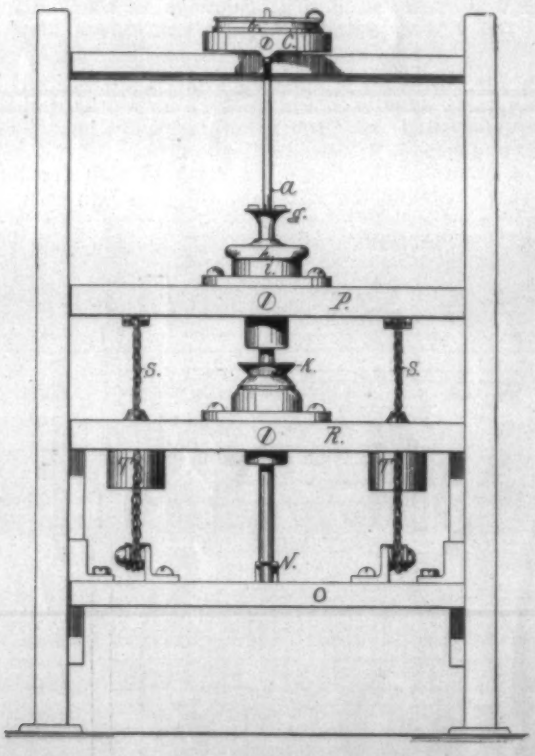


Figure 10 Mayor's Ring Spinning Frame With Stationary Ring Rail, 1876.

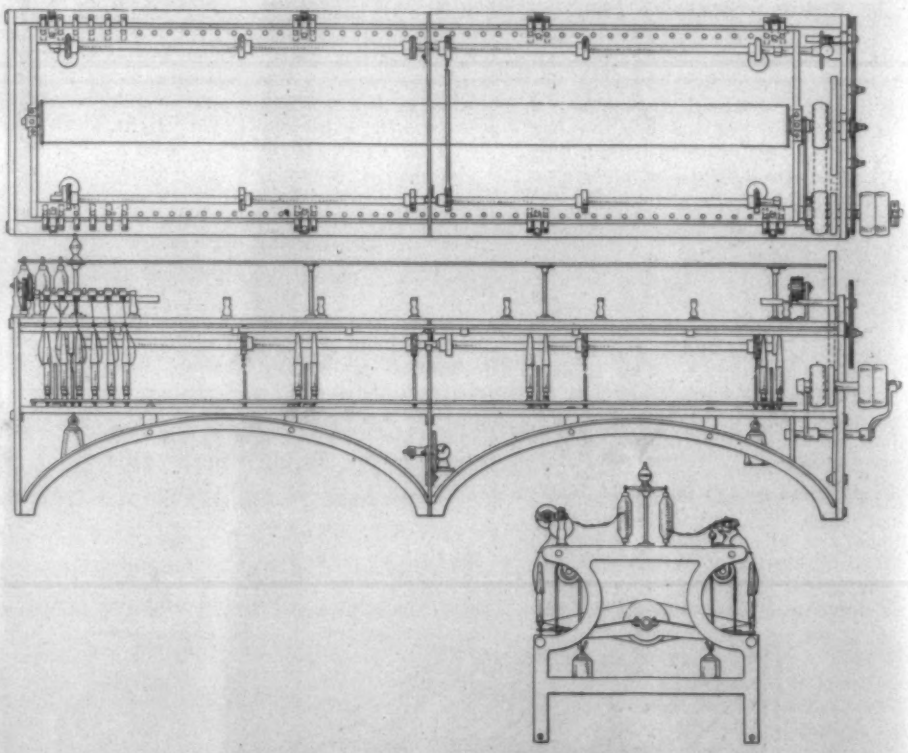


Figure 11 Danforth's Cap Spinning Frame, 1830.

*Priestman's Principles of Woolen Spinning.

Chemistry at the Size Kettle

Address by Herman Seydel before Weavers' Division, Southern Textile Association.

TWENTY odd years ago—looking into possibilities for a career I decided that better sizing would be needed and that a life devoted to this problem would bring plenty of adventure if not a golden harvest.

I have found plenty of adventure, indeed, the size man seems to be blamed for everything under the sun.

This may be hard on him but it also makes him the keener and American specialists have not only successfully supplanted all competition from across the seas but are even shipping their compunds to highly protected foreign countries.

To me this is the best proof that our theories have been correct and there is little need of recalling that twenty years ago chemical compounds looked suspicious if not harmful to most mill men whereas now practically every mill man realizes that the making of sizings belong to the realm of chemistry.

The main argument I propose to offer is that the chemical process necessary for the making of the ideal size should take place in the size kettle itself and not at the starch factory where starch chemists have attempted to locate it.

My first task will be to discuss modified starches and to show that normal starches are better suited to your purpose—my second will be to show you the effect of the chemical size on the normal starch and the kind of film you should endeavor to obtain.

It is hardly necessary to discuss the whys and wherefores of the use of starch in the making of warp dressing for starches are now universally used for this purpose not only on cotton but on jutte, flax, artificial silk and wool to the practical elimination of all other colodial substances.

Modified Starches.

Modified or thin boiling starches are produced by the action of small amounts of inorganic acids in the presence of moisture at comparatively low temperatures under pressure. The acid is then removed by washing and neutralization with alkali. This is a different process and some acid always remains present which interferes very greatly in the making of a good size.

The same process at higher temperature results in the formation of glucose or corn sugar, the in the manufacture of thin boiling starches the action is stopped before the envelope of the starch granule has been disrupted. This results in a starch that in physical appearance resembles the normal or unmodified materials, but differs in its action during heating, the modified starches on boiling producing a less viscous solution than would be made from the same amount of normal starch.

The advantage claimed for this type of starch is that the thinner size permits of better penetration of the yarn, and this in turn is said to make for less shedding at the loom. Also that with thin boiling starches of higher fluidities a great amount of starch may be dissolved and still produce a size not too heavy for practical application. To some extent both of these contentions are true, though it has been demonstrated that the penetration is not as thorough as was at one time claimed, and that extreme penetration is not of supreme importance in the production of well sized yarns.

This raises the question of what is a well sized yarn and by what criterion shall it be judged? Answering the second part also answers the first, a yarn is well sized when it weaves without breakage and without loss of weight due to shedding. That is self evident and is true for both lightly and heavily sized yarns.

Having stated our ideal of a sized yarn, the next question is what are the important factors governing the production of an ideal dressing. A good size should be uniform in composition and consistency, and should possess tensile strength, flexibility, as well as adhesive properties, and should be capable of transferring these properties to the yarn, and for this purpose should possess sufficient penetration to achieve this end.

Uniformity in composition and consistency is essential in order that the yarns passing through the size box may absorb the size evenly; and this phase of the matter has been pretty well taken care of by the manufacturers of slashers in providing size circulating systems, temperature regulators, etc.

Since the prime function of the dressing is to cover the yarn with a protective film, much as paint forms a protective film for porous wood, it is essential that is should possess inherent strength in order that it might fulfill this important function. Yarn covered with a size which forms a weak film, or no film at all, cannot and will not be adequately protected during the stress and strain of weaving. The protection afforded is in direct proportion to the strength of the film of size.

The strongest film, however, would be totally inadequate for the service required, did it not possess the equally important property of flexibility. It is to provide this that fast, oils and chemical softeners are necessary for the production of a suitable size. Their proportions may and should vary with the yarn and the purpose for which the size is intended, but it is impractical to produce a good dressing without adding them to the starch for they play an important part in altering the tensile strength and adhesive properties of the dressing.

In the main softeners divide themselves into two classes, fats and oils on one hand, and hygroscopic or water attracting materials on the other. Proper blending of both is necessary to obtain the best result.

When fatty or oily materials are added to a starch paste and thoroughly incorporated by the agiation produced by mixing and boiling, the oil is broken up into minute droplets, microscopic in size or even smaller, dispersed throughout the mixture to produce an emulsion. The viscosity of the starch paste prevents their coalescence, and they in turn modify the viscosity of the size, as well as affecting it in

other ways. The adhesiveness is strongly modified, as is necessary, for without this we would have the warps sticking to each other, the cylinders, and everything they came in contact with.

Hygrosopic softeners on the other hand are freely soluble in water and disseminate readily throughout the size. Their function is to attract water form the atmosphere and prevent the excessive drying out of the size film on the warps. To some extent they increase the adhesiveness of the size by reason of this very property They are essential to the production of a good size, however, as the fats alone cannot prevent excessive dryness . Drying out increases the percentage of fat, with consequent loss in adhesive power, which results in shedding—and that means trouble, with a capital T.

Having outlined the physical aspects of a good dressing we come back to the important question of what starch to use to insure correct application of these desirable features to the yarn. A thin boiling starch readily suggests itself, as indicating penetration of the size. This might be desirable if it could be secured without sacrificing more important porperties.

When a cross section of sized yarn is examined under the microscope it is found that the starch or size is present as a thin outer layer surrouding the bundle of fibres, and that it does not penetrate into the individual cotton hairs, but only surrounds them and werks its way into the bundle for only a very short distance. This is explained by the fact that when the size comes in contact with the yarn the water is quickly absorbed from the size by the fibres, which results in a film of concentrated size forming immediately around the yarn, this concentrated film is so viscous that the particles are unable to penetrate further. As a result, whether normal or modified starch is used, the size does not penetrate the yarn completely. There is no filling up the spaces between the fibres with a cement like material that binds them into one solid rod-like mass, but only a comparatively thin film of size to penetrate but a little ways between the fibres on the outside of the yarn. This fact is of the utmost importance and must not be lost sight of.

Properties of the Size Film

It must possess toughness and flexibility, so that it may bind and protect the outer fibres. It must possess adhesiveness so that it will stick to its job, and it must have tensile strength so that it will not disintegrate and so fail in its mission.

As sated, modified starch is produced by the action of dilute acid. If a 90 fluidity starch is wanted the action is continued for quite some time, if 60 fluidity is desired a somewhat shorter acid treatment is necessary, still less for 40 fluidity and so on. But all are produced by the same general method, the principal variation being the time that the acid is allowed to act.

It would be strange indeed if this strenuous treatment had no effect on the starch other than to cause it to form a less viscous paste. The very fact that the starch boils thin is an indication of a prolonged change in its chemical composition, and it would be reasonable to assume that is physical characteristics other than viscosity may also have been modified by this treatment. Investigation shows this to be true, and it has been found and repeatedly demonstrated that the films resulting from thin boiling starch sizes are considerably weaker than those formed from normal starch treated in a similar manner.

A starch grain has been aptly compared to an egg, the shell of which must be broken before its contents can be utilized. And a solution of boiled starch can be considered similar to an enormous number of broken eggs with the broken shells mixed throughout the mass. In fact, it is the broken envelops of the starch granules that give to a starch paste its body or viscosity and its strength, hence its name, amylopectin - starch jelly-former.

Carrying the simile further, we can readily see how treating the unbroken eggs with dilute acid would cause them to break more easily, by dissolving the shell to a greater or less extent, and that the more the shell was dissolved the less strength it would have to impart viscosity to the solution.

And it is with the starch grain. The longer it is treated with acid, the more quickly does it break and less viscous is the resulting solution.

The strength that nature imparted to the starch grain has been destroyed by the acid treatment. The lack of strength in modified starch films is thus seen to be a logical outcome of the treatment it has received.

And thus we find upon examination that the properties of thin boiling starches are obtained only at the sacrifice of its most important property, tensile strength.

I have before me samples of dried dressings made of a chemical size and corn starches of different fluidities.

Sample Number 1 is of socalied 90 fluidity—you can see that upon drying no film is formed—the little round globules posses no adhesiveness.

Sampe Nnumber 2 is made of 60 fluidity starch and also forms the same sort of round crystals that may be used in finishing certain silken fabrics but which are of no use to the slasherman.

Sample Number 3 to 40 fluidity begins to show better film producing qualities.

Sample Number 4 of 20 fluidity shows no better than 40 probably because of the acid which was not completely removed from the starch.

From none of these can you observe any of the qualities that the size film should have.

Sample Number 5 of normal or unconverted starch—shows a real film—such a covering as will effectually protect the warp in its journey through the manufacturing processes.

All of you can see the vast differ-

ences between this dressing and those made of converted starches. I ame sure that each one of you will be astounded at the wide variation between the two types of starch and the small variation between the dressings prepared with 20 or 40 fluidities.

I am quite convinced that the absence of a definite degree of filming property is due to difficulty encountered by the starch maker in the removal of the acid from the converted product and therein probably lies the reason why modified starches have not been standardized.

This condition makes it necessary for you to abandon the use of acid treated starches and to rely on the product of nature itself.

This argument brings us to the discussion of applying the necessary chemical process right at or in the size kettle.

You are probably all using some chemical compound and those few of you who attempt to do your own chemical work are usually in such hot water that sooner or later you will appreciate the value of the service we textile chemists can render you.

Custom and ethics forbid that I unduly blow my own horn but I think we are agreed that the simpler the task is made to the slasherman the less he is burdened with the solving of the intricate problems of chemical warfare, the more even and the more satisfying will his work be to you weavers.

The task therefore of the chemical size maker is to offer one compound article which will so affect the starch as to produce the ideal size film.

Before discussing the properties of such ideal film may I briefly state that chemical compounds differ in their action on the starch because of factors which are not easily recognized and which factors form the basis of the theory used by each indiviual manufacturer.

Many of you have had our products analyzed—frankly you asked more of the analyst than he could well furnish. We all know about fats, gums, chlorides, hygroscopic agents, mineral matter and so on, and we also have a sparkling acquaintance with saponifiables and unsaponifiables but why is it that two sizes made by different makers and analyzing practically the same will in one case show 97 per cent production in the weave room with 1-2 or 1 per cent of seconds and the other barely bring 69—90 per cent total production?

The reason lies in the fact that no analysis has ever brought out the chemical fundamental of a sizing compound of real value. This is why we size makers have been able to bring you to the point of relying upon us for size service—just as you rely on other experts for service in planning your mills or building you equipment.

This brings us to a discussion of the function of the chemical compound in the size kettle.

In the first place let us dispose of the matter of starch or starches. We have shown you that we believe in the use of unmodified starches and we further believe that the mixing of starches is of distinct advantage for many purposes. For instance, on very coarse and open yarns such as go into osnaburgs, economy and efficiency will be served by the use of possibly two or three parts of pearl corn starch to one of a medium grade tapioco, which happens at present to be low in cost. The film so produced will show better flexibility and decidedly more strength than that made of 20 or 40 fluidity corn starches.

On medium yarns the construction of the cloth has considerable bearing on the type of dressing necessary for maximum production but the more exacting are the demands the less should you attempt to use converted starches because the size films made with them are weak and crumbly. If any be used it is clear that they should not form the bulk of the starch used.

On very fine yarns where the cost of the dressing is not a material factor, the best sizes will be produced by the mixing of two starches such as corn and potato, or corn and wheat. The benefit derived rests on the difference in the filming properties of these individual starches for two combined make better films than either component.

Having disposed of the starch question let us consider the effect of a properly compound sizing material on the starch, this has been studied by the making of thousands of film—which I am sorry to say I could not exhibit here as I had no means of keeping them from deteriorating after an indefinite period. The making of these films and their careful study under the microscope and otherwise has thrown considerable light on the fundamentals of our work.

In the first place the fat content of the size has no proper function except that of lubrication and this function may in turn be divided into two parts—the first in the size kettle itself where the minute particles of oil break down the adhesive properties of the size—the second where the same fat keeps the size form sticking to the cylinders of the slashers and later to the reed and harnesses of the loom.

We all know that a certain amount of fats are necessary to every warp dressing but we also know that we have a much better understanding of the quantity necessary than did our forefathers who had to rely on tallow and soured flour for all their needs.

We know for laboratory as well as practical experiments that tallow is far from being the best lubricant or fat, and that as the tallow pot has been eliminated form the power plant, so also, are more ef-

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Weaving of Rayon

RAYON is used in all sorts of combinations, both in the warp and in the filling. Fabrics of all Rayon are being used for curtains and drapery material and are very effective; the largest use, however, is in combination with cotton where it is used as a stripe, as a figure, or as solid filing. If the warp has been properly prepared the weaving of Rayon as filling presents more difficulties than as warp.

Both cops and bobbins are used, but if cops are used better results are usually obtained by using an unpolished paper free from roughness with indented rings at intervals to prevent the yarn from slipping off. Even though the cop or bobbin has been properly wound the smooth, spring and slippery nature of the yarn makes it very difficult to handle as it will unwind too easily, causing slack picks, bad selvage crinkles, curls and tight picks. The ordinary method of partially closing the eye of the shuttle with felt or a brush is not sufficient to take care of these troubles as the yarn may slip off the bobbin and accumulate between the tip of the bobbin and the eye of the shuttle. One method of overcoming the slipping is to put a slight even pressure on every coil of yarn as it is wound off of the cop or bobbin by means of an elastic tape about ¼-inch wide placed in the shuttle with one end fastened behind the base of the tube or bobbin and the other fastened behind the base of the tube or bobbin and the other fastened to the bottom of the shuttle near the eye, the tape is drawn tight enough to press against the Rayon. Felt, chamois and many other soft, firm materials are used in place of the elastic tape to secure the same result.

A few mills weaving narrow warp stripes put both the Rayon and cotton on the same beam. This should not be done as the two yarns contract differently in finishing, the Rayon requiring about 3 per cent to 8 per cent more length in the warp than the cotton. If there is not a sufficient amount of Rayon being used to warrant a separate beam, a small creel should be set up in back of the loom and the Rayon run off of the creel.

Most mills find little difference in the results of varying the methods of drawing in the warp some, however, prefer to use the back harnesses for the Rayon and the front harnesses for the cotton ends.

The use of steel heddles is considered to be better than the ordinary wire or yarn heddle. The heddles must not be crowded.

Perhaps one of the most common troubles with the warp is the splitting of the yarn due to chaffing in the harnesses and reed and is probably caused by either a rough harness eye or by a rough reed wire.

If it is the heddle that is causing the trouble a new one should be put in or if it is the reed the rough spot smoothed with emery cloth.

There are two distinct views on the best type of reed, one is that a fine flexible reed should be used, the other that a coarse a reed as possible should be used and more threads per dent inserted. With this second method it is suggested that if considerable yardage is to be woven of any one pattern, where Rayon and cotton are both used in the warp, it will help to make the reed conform to the pattern, that is, where the Rayon is drawn in, the reed should be made coarse with more ends per dent, and where the cotton is drawn in, the ordinary count of reed with the usual number of ends per dent used. The first method is in most common use in this country.

The yarn should not be allowed to rub along the race-board. Sometimes the shuttle race is covered with swansdown or flannel to form a cushion for the bottom shed, allowing the shuttle to slide over the ends without rubbing them.

If a bad place is made in the cloth the weaver should be furnished with a celluloid pick having a single rather blunt point instead of the regular pickout comb which will bruise the Rayon.

The weaver should never break off the loose filling yarn at the selvage caused by shuttle changing as the pull in breaking the yarn will extend into the cloth stretching the yarn and making a shiny pick. These loose threads should always be cut, preferably with scissors.

In starting the looms in the morning care should be taken to adjust the warp tension as a change in the relative humidity during the night may have made the warp either slack or tight.

In general, the Rayon manufacturers and mills agree that both the warp and filling of Rayon should be woven under as little tension as possible and still have the yarn lay flat in the cloth.

When used as a warp stripe the gray cloth it appears almost to form loops on the surface. If it is put tight enough so that it lays flat in the gray cloth it will be so tight in the finished cloth that it will either cause the cloth to crinkle or the stripe itself will break or fray.

The weaver should inspect his

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Practical Discussions
By
Practical Men

Cloth Strength.

Editor:

I notice that the cloth I weave is being tested for breaking strength very often. I am anxious to make as strong a cloth as possible and want some information on this subject. I would like for someone to tell me what general difference it will make in the breaking strength if the person who tests the cloth selects pieces from near the slvedge or from the middle of the cloth? Does the action of the temple tend to reduce the breaking strength of the cloth near the selvedge?

Miss.

Brushing Cloth.

Editor:

I am anxious to know how to make a good inspection frame that will brush the cloth on both sides at the first run through the frame. I have a fairly good inspection frame now, but it does not inspect or brush both sides. I would like to hear from some good men on this.

Overseer Finishing.

Are all Traveler Rings Perfectly Round?

Editor:

While I have had considerable experience in spinning, I was surprised recently when a machinery expert told me that spinning rings are not all perfectly round. I would like to know whether this is true and hope some of your readers will give me the information. If the rings are not perfectly round, what causes the imperfection?

R. A. C.

Answer to Designer.

Editor:

In answer to the question by "Designer" in your practical discussions with regard to the origin of the word "Selvage" this word is a corruption of the original two words "self edge."

In ancient times the first manner of weaving was by driving two pegs in the ground a certain distance apart acording to the width of the fabric to be made, and another two pegs the same distance apart for the other end of the fabric and as far from the first two pegs as the length of the warp threads. After stretching the warp threads tied to a cord or stich at each end of the warp the filling yarn was made only of sufficient length to go across the warp one time. Naturally this left a ragged edge on each side of the cloth. This ragged edge was overcome by turning and hemming.

Later the warp was stretched vertically on a frame and the fabric was made by two weavers with the length of the filling thread twice the width of the warp. One of these weavers would insert the filling from one side and the weaver on the opposite side would pass the filling back through the warp. This would thus leave the ragged edge only on one side and the smooth side where the filling had been passed back was then termed "self-edge." With further improvements of the hand-operating looms the filling was eventually made continuous and with the use of the cop and shuttle the weavers were able to obtain a "self-edge" on both sides of the cloth. In this connection, in the first methods of weaving both with regard to the horizontal stretch of the warp and later of the vertical stretch, there was no loom harness used. The warp threads weree separated by the fingers or sticks as the filling threads were passed in between.

H. S.

Answer to Selvage.

Editor:

Answering to Selvage I cite the following:

In the "Dictionary of Dry Goods", by George S. Cole, published in 1892, there is the following definition:

Selvage. (From self edge, or that which makes an edge of itself without hemming). The edge of a web or fabric so woven that it does not allow of raveling; also, that part of a web at either edge which is not finished like the srface of the cloth and which is meant to be torn away when the material is made up, for use in making the seam; sometimes spelled selvedge.

Bum Weaver.

Answer to Mill Owner.

Editor:

In answer to Mill Owner regarding paying doffers on the piece system, I will give my experience in this matter. First, we paid our doffers for doffing so many sides. The trouble was that it did not make any difference to the doffers whether the sides were running or standing.

Second ,we paid by the hank. This was easily done. The sides had to run but it made no difference whether the ends were up or down, so long as the rollers turned out

cash for the doffers. The main trouble was that the doffers let the bobbins fill to full.

Third, we paid them by the pound of perfect bobbins. This we found to be the ideal piece work system. This prompted the doffers to doff rapidly and to piece up all ends. They even helped the spinners at times to catch up when behind. They would not allow the spinners to run their frames slowly by slipping the belt. It is true that we are obliged to have a yarn weigher, but believe it pays. The doffers are after the pounds and everything is going nicely. You cannot make a mistake in adopting this method. It also prevents bad sets, as no pay is given for them. Bad bobbins are also deducted from the weighing. This system works to perfection.

Manufacturer.

Answer to J. K. M.

Editor:

The question by J. K. M. regarding elasticity in yarn is very important. Not much has ever been written on this subject. And there is so much to that it is hardly possible to do justice to a big subject like this in the space so limited as these columns are. In the first place, elasticity in yarns is of prime requisite. Yarns with out elasticity are worthless. It is impossible to get successful results with yarns having no elasticity, such yarns could not be spooled, warped nor woven. It would snap in two with the least uneven strain. Elasticity in yarn acts in the same way as shock absorbers do on an automobile.

You cannot put elasticity in your yarns. The elasticity is already in the yarns. But you can easily destroy or injure it. Be very careful not to overstrain your yarns at any point. Yarns are known to have plenty of elasticity so long as it will come back or recoil to its original length when it has not been abnormally stretched, strained or overtensioned. I hope others will give their own views on this subject.

Elasticity.

Answer to Designer.

Editor:

Manager will also be glad to answer Designer's question if allowed the space in your column of discussions. The word "Selvedge" is supposed to have originated form the word Self-edge. That is instead of taking a torn edge of cloth and fastening or closing it over by turning over the edge and sewing or in other words by hemming, the edge of the cloth as woven did not require any further attention. It was a self-edge, and the word Selvedge is more easily pronounced then the word Self-edge. "Selvedge" is also the more correct form of spelling than the word "Selvedge" and which is merely a corruption of the word Selvedge. I trust this will fully inform Designer.

Manager.

American Pulley Beam Head

A serious study of an industrial problem almost invariably finds the solution. This is well exemplified in the textile industry where there has long been a need of a beam head for warpers and slashers that would overcome some of the troubles and losses of the past.

These have been largely due to the fact that the old types of cast iron heads were subject to breakage in handling in the mills and also in shipment from mill to dye house, or bleachery, or to weaving mills.

Cast iron heads were also heavy, a factor which not only increased freight charges but which actually increased the liability to breakage because of the very cumbersomeness that went with this weight. Wooden heads likewise had their drawbacks, which were principally those of warping and breaking.

The American Pulley Company of Philadelphia, well known because of their products for the power transmission field, recognized the need for developing beam heads that would overcome these drawbacks. They accordingly devoted themselves to a serious study of this problem, with the result that they developed a pressed steel beam head possessed of unusual advantages for the textile industry and entirely eliminating the drawbacks that had handicapped mills in the past.

The outstanding advantages in this "American" pressed steel warper and slasher beam head, which was put on the market a little more than a year ago, are given by the makers as follows:

Experience has proven that beams are occasionally dropped. With the use of "American" pressed steel heads, there is no breakage, and warps can be handled and shipped without fear of damage.

This head has been designed with a view to overcome the faults existing in other heads. It is strengthened where the greatest strains are imposed, and will not warp nor get out of shape with reasonable handling in shipping or in general factory.

Being only half the weight of cast iron ,these heads are much easier to handle and effect a substantial saving in transportation charges.

This head is made of three parts —an inner and outer head, and a cast center. The inner head presents a smooth, flat face, which insures a perfect fabric. The outer head is corrugated and is attached to the inner head in a manner which provides absolute rigidity. The flange, in which a smooth friction groove is formed, is supported around its entire circumference by the outer head.

As might be expected, a company so well known for its excellent products had no difficulty in securing trails. These resulted in the immediate acceptance throughout the industry; many mills repeating orders immediately after trial. in some cases purchasing several heads as part of the program of replacing old equipment.

Woven Seersucker Stripe

By Dixie Weaver.

ONE line of fabrics which has not been in very large demand for a number of years past, but which recently has been selling in large quantities, is that line ordinarily known as seersuckers. It must not be supposed that these cloths do not have a more or less regular distribution, but as is the case with other materials, there are certain times when the demand is much larger than usual. Most of such fabrics are desirable for many uses, such as dresses, waists, rompers, children's garments and various other purposes. Generally they are firm fabrics and will return quite a large amount of value, inasmuch as they are woven with comparatively coarse yarns and are of heavy weight.

One of the great advantages of these fabrics is that they do not have to be ironed similar to most other materials after they have been washed. The nature of the cloth permits this process to be dispensed with, and therefore makes the material suitable for many uses where washing can be accomplished, but where there is little opportunity for any ironing process. There are two distinct classes of woven seersucker materials. First, that class which is made from carded yarns, and, in the majority of instances, contains more or less colored yarn, and second, that class of fabrics which is woven from grey yarns and may be produced from either carded or combed stock and sold in the white state or may be piece dyed.

Of course, it is possible to produce the first class of fabrics mentions from combed stock, but, due to competition in price and various other features, it is seldom done. Without question, the second class of fabrics returns much more value than the first class, but it has often happened that the style of this class of materials has been somewhat lacking, due to the absence of color. Today this is not so necessary, inasmuch as colors fast to bleaching can be used, although up to the present few of such fabrics have been made. The noticeable feature of these seersucker fabrics is the crinkled appearance of a portion of the cloth. This crinkled portion is, in all the fabrics we have mentioned, a woven one, will not pull out and might be said to be permanent. The degree of crinkle will vary in different fabrics, depending upon the cloth construction and certain features in making. The effect is produced in the following manner: In ordinary fabric weaving the through weights or in some other beam upon which the warp yarn is placed is held quite tightly, either manner. This beam is let off either mechanically or through friction, so that as the reed forces the picks into the cloth, enough yarn is pulled off to allow for the weaving of the fabric.

This above condition is noted upon one of the beams used in making a seersucker fabric, and is the portion of the warp in which there is no crinkle. For the crinkle portion, an extra beam is necessary, and there is very little weight used upon such beam, so that as the reed forces the picks into the cloth it also pulls down a certain amount of yarn, which extra yarn creates the crinkle in the fabric. There are other reasons why the crinkle is formed, one is the fact that extra yarn is used in the strips where the crinkle is made. This extra yarn causes greater friction and makes the effect more prominent.

Crinkle effects can be produced without the use of extra yarn, but they are not likely to be so satisfactory as where extra yarn is used. Not only does the extra yarn cause more friction with a greater yarn let-off, but it also makes that portion of the fabric where the crinkle is produced more prominent, due to its heavier character.

In our analysis we have given two different layouts for the warp patterns, the first one being that which relates to the different colors and their arrangement in the cloth. The second is the method of placing the yarn on the beam. The ground beam contains both white and colored yarn, for the take-ups on these ground yarns are identical. The second beam contains the crinkle yarn, upon which there is a much greater take-up. With these two layouts there should be no great difficulty in determining just the method which is used in making the cloth pattern.

In addition to the layouts as given, we are presenting the fabric weave as it appears in the cloth. It will be noted that certain threads weave differently than others. In some instances a basket weave is used, in others a plain weave, while in still other instances the threads weave as plain, with the exception that instead of a single thread there are two alongside which work identical. Underneath the design we have given the reeding plan, which indicates the number of threads to be drawn in each dent in the reed. It will be noted that where the

threads weave otherwise than the ordinary plain weave they are drawn four threads in a dent. The obtaining of desirable results in many varieties of cloth is partly due to the correct placing of the threads in the reed. It often happens that through a correct method satin stripes can be woven from the same beam as ground threads of a plain character and at other times incorrect reeding will cause a great deal of trouble in cloth making.

Sometimes, the percentage of production will be unreasonably low, just because enough attention has not been given to this feature of cloth planning. In drawing in a fabric of the character analyzed, it is possible to use two methods, the first where a single thread is drawn in every heddle, even though some of them work the same as those alongside. The second method is where two threads are drawn in the same heddle whenever they operate in the same manner. This latter method is the one generally employed, although in a certain few instances it has been found more desirable to use the first method. One reason why the second method is better is because it decreases the number of heddles necessary and allows more space for the threads or harnesses to operate as the cloth is being woven. When this method is taken it is, however, possible for single threads to weave in the heddles where there should be two threads being used.

Without doubt the sale of woven crinkle effects would have been much larger than it has been; in fact, it is believed that the sale would have been very much larger than it ever has in the past, were it not for the fact that many somewhat similar effects have been produced during the last two years by other methods than weaving. Inasmuch as many consider this second class of fabrics on the same basis as the ones previously mentioned, it may be well to give a short description regarding them and their methods of making. These latter materials are not produced by the weaving process; that is, the crinkle effect is not produced in such manner. Most manufacturers and practically all converters and finishers are familiar with the fact that the mercerization process will cause quite a large cloth shrinkage if it is used and the fabric not held out tightly.

It is upon this contraction that the printed crinkle effects are obtained. Upon certain portions of the fabric, by methods somewhat similar to the ordinary ones used in making printed patterns, is placed a solution of caustic soda. This solution causes the fabric to shrink radically where it is applied, and when this shrinkage occurs it causes the remainder of the fabric to crinkle up and makes the effects which are not used so extensively. On this style of fabric various printed patterns can be placed in different colors, and the large sale has been possible because the fabrics are desirable, not because of a comparatively low price.

Finishers who handle fabrics of this character demand a 25 per cent working loss, which is about the extreme amount of shrinkage that mercerization is likely to cause, but it has been found that on most lines of these cloths the loss to a converter because of shrinkage will be about 18 per cent, though in some few instances it has run as high as 20 per cent. This loss in shrinkage is a serious matter to the converter and must be accurately known if a correct cloth price be obtained. When a fabric loses in length anywhere from a fifth to a sixth it naturally makes the value of the material just the amount greater than it previously was, for it increases the number of picks per inch the relative amount named.

The fabric analyzed, and which, as stated previously, is a woven effect, is produced in large quantities regularly. The retail price is 30 cents per yard, thus allowing the regular distribution prices to be noted. It is seldom that retailers can purchase such a fabric at less than 20½ cents per yard, and it is almost impossible for jobbers to force retailers to pay over 21 cents cents per yard for this sort of fabric. The commission house price on the cloth is about 18¼ cents per yard. Retail prices show a much smaller advance over the cost of production on fabrics of this character than they do no most other lines of fancy fabrics. This is because the materials are produced in large quantities sold rather than high profit through the sale of small amounts.

One of the great advantages in a mill producing a fabric of the character described is that a great variety of results can be obtained, even though the cloth construction does not vary widely. In all these cloths the construction is identical, so far as the count in the ground cloth is concerned, although there is a small variation in warp count, due to the different spacings and arrangements of crinkle stripes and not through the variation in yarn size which is necessary in other styles of fancy fabrics made from grey yarns.

One of the features which has been of decided advantage in the production of printed crinkle effects is that there has been a great variety of results possible, due to printed patterns and different arrangements of stripes. While different effects are possible in greater or less amount on many styles of plain fabrics it is not often that the variety possible is as great as is noted on the printed crinkle materials. Sellers all desire to purchase amounts of a ground fabric, for in this manner they can obtain very low prices, but unless the ground cloth can be finished in many attractive ways which are in demand at the time, it is not always a good policy to make large purchases.

In the majority of instances the yarns used in the making of woven crinkle effects where colors are used, are in the vicinity of 20-1 warp and 40-1 to 45-1 filling. Of course, there are some finer lines than that mentioned produced, but their sale is comparatively small

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Meeting of the Weavers' Division

(Continued from Page 7)

will run to one side and will not have a very long life. Belts too tight will break the crank shaft.

W. H. Gibson asked what were good fasteners for loom belts.

Franks said that on two-inch loom belts he preferred a good belt buckle.

Hamby asked if the dressing should be put on the looms while in motion.

Franks said that if carefully applied, the dressing could be put on while the looms were in motion without getting anything on the cloth.

J. G. McNeil asked if he had trouble with the loom belts jerking.

Franks said there would be no such trouble if the belt dressing was applied to the back of the belt and if there was the jerking trouble from any dressing, it was probably due to there being rosin in the dressing.

In response to an inquiry, only four stated they were dressing their loom belts while the looms were in operation.

As an illustration of his method of treating belts, Franks stated he only bought six crank shafts during the past year for the Drayton Mills, which have 842 looms. He said a good waterproof belt could be made to run eight or ten years, if given the proper care.

W. B. Williams said that he cleaned his belts with old brooms.

R. B. Burham said the average life of his loom belts was about seven years.

There seemed to be considerable difference of opinion relative to the advantage of single or double belts.

A. L. Campbell said he found his double belts split very badly.

R. B. Burham also made some test, but was not ready to give a decision. He stated, however, that at the present time it appeared that the single belts gave equally good results as the double belts.

Weavers' Lunch.

The weavers' lunch was held at 12:45 p. m. in the Assembly Room of the Equinox Mill Community Building, with Robert Ligon, manager of the Equinox Mills, as toastmaster. As there were one hundred and ninety-eight men at the luncheon, it taxed the full capacity of the Assembly Room and an additional room had to be used. The lunch was prepared and served by the women of one of the churches in the Equinox Mill village and was thoroughly enjoyed.

During the lunch, Mr. Ligon called on Marshall Dilling, president of the Southern Textile Association, for a few remarks. R. W. Phillip, associate editor of Cotton, told about the coming meeting of the Texas Textile Association, and Frank J. Clark, superintendent of the Anderson Cotton Mills, made a short talk. Frank Watkins, a prominent attorney of Anderson, made the feature address of the lunch.

Chairman L. L. Brown called the afternoon session to order about 2:30.

Marshall Dilling made an announcement about the meeting of the Southern Textile Association at Asheville on June 19th and 20th.

H. Seydel read a carefully prepared paper, which is published elsewhere in full in this issue. Mr. Seydel showed a thorough knowledge of his subject, and also exhibited samples of starch under different conditions which demonstrated the points he made.

Following the address of Mr. Seydel, there were a number of questions, and the question of spraying oil in the hopper was discussed.

Although this was not a subject for weavers, it had recently been of such interest that it was decided to give some amount of time to its discussion.

R. W. Phillip, of Atlanta, Ga., reported upon the results being obtained in the Georgia mills, and a number of those present stated that they were now trying the oil in their mills.

The chairman called attention to the Arnold Slasher Tension Device, through which the proper tension on beams could be obtained. This device was invented by W. W. Arnold, Jr., of Manchester, Ga.

W. H. Gibson, Jr., stated that he had just installed one of these devices and, while he had not had time to entirely demonstrate same, it looked all right to him. He said the yarn came from each beam to a special roll on which there was the tension device, and that the yarn did not pass from one beam to the other.

Chairman Brown also called attention to an invention of W. J. Britton, of the Spartan Mills, Spartanburg, S. C. This device is inserted where the warp splits on the front of the slasher and from the pull of the yarn indicates the manner in which the size is being put on.

Mr. Chiplie said the device worked where the lease rods were inserted, and in case there was less than the proper amount of size the warp would split easily and, therefore, the registering pointer would drop back from its normal position. He said that by having this device on two or more slashers, it would quickly show that one slasher was not doing as good work as the other.

Chairman Brown asked the following question: "What per cent of moisture should be left in the yarn as it passes into the slasher?"

W. H. Gibson, Jr., said that on 30s yarn it was mildew if more than 8 per cent moisture was left in and he thought the same rule would apply to other yarns.

H. Seydel said that the mildew depended upon the character of the size, as some sizing compounds yarn could be left damp for an indefinite period without mildewing.

At 4 o'clock the meeting adjourned in order that some of those present might catch the 4:25 train.

Dye Production Lower in 1924

PRELIMINARY figures compiled by the United States Traffic Commission indicate a domestic production for 1924 of about 67,000,000 pounds of coal-tar dyes, with a value of about $36,000,000. This quantity represents a 28 per cent decline from that of 1923, which was the largest in the history of the industry. The sales of dyes in 1924 were about 63,200,000 pounds with a value of $33,800,000. This is a 27 per cent decrease in quantity and a 28 per cent decrease in value from sales during 1923.

The principal reason for the decline in quantity of the dye output in 1924 was the decreased activity of the textile industry. Among other factors contributing to a reduced production were (1) stocks carried over from 1923, amounting to over 7,000,000 pounds; (2) increased imports following the 15 per cent reduction in the tariff, effective September 22, 1924, and (3) a reduction in exports amounting to 2,211, pounds.

The following table shows a comparison of domestic production and sales for 1914 and 1920 to 1924, inclusive:

Year	Production	Sales	
	Pounds	Pounds	Value
1924.	67,000,000	63,200,000	$33,800,000
1923.	93,667,524	86,567,446	47,223,161
1922.	64,632,187	69,107,105	41,463,790
1921.	39,008,690	47,513,762	39,283,965
1920.	88,263,776	.....	.....
1914.	6,619,729	.....	.....

Decline in Dye Prices

The weighted average price of all domestic dyes sold in 1924 was 2 per cent less than the average of 1923. The following tabulation shows the trend of the average price of domestic coal-tar colors in recent year:

Year	Average sales price of domestic dyes
1924	$0.535
1923	.545
1922	.60
1921	.83
1920*	.99
1917*	1.26

*Unit value of production.

The average sale price of indigo in 1924 was less than 22c per pound compared with 23 cents in 1923. The current price of indigo is 14 cents per pound which is below that of 1913 when our entire supply was imported from Germany and Switzerland.

Effect of Traiff Reduction.

In accordance with the provisions of paragraph 27 and 28 of the Tariff Act of 1922, the ad valorem duty on dyes and other finished coal-tar products was reduced on September 22, 1924 from 60 to 45 per cent and the duty on intermediates, from 55 to 40 per cent. The specific duty of 7 cents per pound on both groups of products remained unchanged. In the Commission's report of 1923 it was pointed out that this tariff reduction would more directly affect the imports of higher priced dyes.

The average monthly imports of dyes for the period, October, 1924, to March, 1925, inclusive, was 452,636 pounds, a 153 per cent increase over the monthly average of the first nine months of 1924, preceding the reduction in duties on dyes. The improvement in the textile trade in the last three months of 1924 was a factor in the increased imports after September. The increase in the average monthly import since the tariff reduction indicates increased competition from foreign dyes. These dyes are almost entirely of German and Swiss origin and consist largely of the higher cost types of dyes used for special purposes.

The imports of coal-tar dyes in 1924 were 4.5 per cent of the total production by quantity, and 8 per cent by value. They were by quantity 5.5 per cent of the apparent consumption, assuming this to be equivalent to production plus imports minus exports. The dyes produced in the United States, based on preliminary figures, accordingly, supplied about 94.5 per cent of the apparent consumption of coal-tar dyes, and in addition, there was an exportable surplus of certain dyes.

Exports of Coal-Tar Dyes.

The total exports of coal-tar dyes in 1924 totaled 15,713,091 pounds, a decrease of 2,211,445 pounds from that of the previous year. The value of the exports in 1924 was $5,635,064, an increase of $69,693 over that of 1923. These figures represent a decline of 12 per cent by quantity and an increase of 1 per cent in value. The decline in quantity in face of a slight increase in value is probably due to an increase in the quantity of indigo powder (100 per cent) exported in palce of indigo paste (20 per cent). In this case the exports for 1924 show little change from those of 1923.

Our export trade in dyes of domestic manufacture consists very largely of indigo and sulphur black which have been shipped mostly to the markets of the far East. The domestic producers have maintained an export trade on these two dyes for several years. Keen competition has been encountered in foreign markets from German and Swiss manufacturers, particularly from the former since the effect of the occupation of the Ruhr in 1923 has disappeared.

Large Consumer of Vat Dyes.

The vat dyes, used mostly on cotton, are of exceptional interest on account of their high fastness and resistance to modern laundry treatment. The production of this class of dyes is probably the most important single advance in the field of synthetic dyes since the dicovery of the first dye nearly seventy years ago. As a result of their use, the ultimate consumer is now able to buy dyed fabrics under guarantee as to the fastness.

Before the war, no vat dyes were produced in the United States. After the production of indigo was developed in this country, the production of vat dyes was started and has

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SOUTHERN TEXTILE BULLETIN

Member of Audit Bureau of Circulations
Member of Associated Business Papers, Inc.

Published Every Thursday By
CLARK PUBLISHING COMPANY
Offices: 39-41 S. Church St., Charlotte, N. C.

THURSDAY, APRIL 23, 1925

DAVID CLARK ..... Managing Editor
D. H. HILL, JR. ..... Associate Editor
JUNIUS M. SMITH ..... Business Manager

SUBSCRIPTION

One year, payable in advance $2.00
Other Countries in Postal Union 4.00
Single Copies ..... .10

Contributions on subjects pertaining to cotton, its manufacture and distribution, are requested. Contributed articles do not necessarily reflect the opinion of the publishers. Items pertaining to new mills, extensions, etc., are solicited.

ADVERTISING

Advertising rates furnished upon application.
Address all communications and make all drafts, checks and money orders payable to Clark Publishing Company, Charlotte, N. C.

Stocks of Goods Getting Low

ONE year ago there were very large stocks of goods and yarns and all goods and yarns sold were in competition with such stocks.

Six months ago the stocks had been slightly reduced but were still large enough to prevent price advances.

Today the stocks of goods and yarns held by the mills will average below normal and that fact makes the situation far stronger than is generally realized.

While some single mill groups in Gaston county had on hand six months ago more than a million pounds of combed yarns, it is said that the total stocks in that fine yarn county are less than a week's output.

One yarn mill that had 500,000 pounds of stock 20-2 and 24-2 yarns on April 1, 1924, had no stock yarn on April 1, 1925, and was sold ahead to June 10th.

One weaving mill that had 2,000,000 yards of goods October 1, 1924, has sold them all and is now sold ahead into June.

One mill on napped goods that had 1,750,000 yards August 1, 1924, now has no stock, not covered by orders.

We spent one afternoon last week visiting the commission houses in New York and all of them reported, with a few exceptions, the stock goods held by their mills had been sold.

We attended the meeting of the National Association of Cotton Manufacturers at Washington and of the American Cotton Manufacturers at New Orleans, and at both places made it our business to make inquiries of almost every mill man we met relative to the stocks of goods held by mills.

The answers, with few exceptions, were that they had no stock goods and knew of very few mills that had any.

There does appear to be some stocks of pajama checks, gauze and ginghams, but the last named have been greatly reduced by recent sales.

In spite of the present pessimism, it appears to be the fact that during the past six months the output of our cotton mills has been consumed and buying has exceeded output to the extent necessary to absorb the stocks of goods and yarns held six months ago.

Should buying continue upon the same scale during the next six months with no stocks to absorb, we should be able to convert such situation into a seller's market and advance prices to a profitable basis.

We, of course, do not know the future trend of cotton prices, but it is entirely possible for us to raise less than 12,000,000 bales this year.

Should any such inadequate yield be indicated the buyers of goods and yarns will immediately abandon their hand-to-mouth policy and with no stocks on hand they will be forced to pay reasonable and profitable prices.

The greatest enemy of the cotton manufacturing industry of the South today is the cotton manufacturer who, whenever the possibility of thirty-cent cotton is mentioned, puts on a sad expression and says he is afraid that such a price will reduce the consumption of cotton and hurt business.

It is a sentiment that has been carefully created by the buyers of goods and which foolish cotton manufacturers spread to the detriment of their business.

When cotton was above thirty cents the statement was made that if cotton went back below 25 cents and remained steady, there would be profitable business and everybody would be happy.

Cotton went below 25 cents and we have had the steadiest cotton market that has prevailed in many years, but the cotton mills have not profited and the only persons who have been happy have been the buyers of cotton goods and yarns.

It is certain that 30-cent cotton can not hurt any more than has 23-cent cotton, and we do not know of another industry in which the manufacturers will, so willingly, put on sad faces and, parrot like, repeat the propaganda of their natural enemies, the buyers.

The difference between 23-cent and 30-cent cotton amounts to less than 3 cents on a shirt, and the truth is that the public is paying just as high prices for cotton goods today as when cotton was 30 cents.

There is, of course, a point at which consumption will be reduced, but in spite of the parrot like distributors of buyers' propaganda, we believe that an advance in cotton price to 30 cents would not materially reduce consumption of cotton goods.

Aside from our interest in seeing the Southern farmers get a fair price for their product, it makes no difference to us whether cotton sells at 23 cents or 30 cents, but we have tried the 23-cent level and found no profit, and believe that it will require an advance to cause the buyers of goods to depart from their present hand-to-mouth policy.

When cotton advanced from 22 cents to 30 cents in the fall of 1923, business improved and the profits became greater.

When cotton went beyond that point to 37 cents and was met with the prospect of a much increased cotton acreage, followed by such remarkable cotton growing conditions that fall, cotton sold six cents below spring and summer cotton, business in cotton goods decreased and prices collapsed.

The buyers of cotton goods have falsely set forth the propaganda that the advance to 30 cents caused bad business in 1923 and have made the mill men believe such to be the case, but the apparent anxiety of the buyers over the effect of 30-cent cotton is based upon his very natural desire to secure his goods and yarns at the lowest possible price.

In our opinion we are facing an exceedingly serious cotton situation. Texas has not only passed from October to April with only 5.61 inches of rain, including no soaking rain, but has now gone almost through April with no relief.

In 1918, the only year Texas has ever raised a good crop without winter rains, there was 3.99 inches in April and uniform rains every month thereafter.

We may be able to raise an adequate crop this year, but in our opinion the chances are against same.

The stocks of goods and yarns which have been a weight upon the market since 1920 have now, for the first time, been either entirely wiped out or greatly reduced and demand must be met solely by production.

We are optimistic when practically every cotton manufacturer is pessimistic.

The Weavers' Meeting

WHEN the question of holding a Division Meeting of the Southern Textile Association in Anderson, S. C., was first discussed, it was argued that it would not be possible to obtain a large attendance, but when the Weavers' Division met there two years ago there was an attendance of 204, and when the weavers again met in Anderson on April 15th the attendance exceeded 225.

Not only was the attendance large but the Anderson mill men were very active, making the meeting a success in every way.

The meeting on April 15th was placed at Anderson without any invitation from the Anderson mill men because it was known that they would welcome the meeting and do their best to make it a success.

They certainly measured up to all expectations and a splendid meeting was held.

On The Right Track

WE notice the following in a recent issue of the New York Journal of Commerce:

"Several manufacturers of cotton goods were in the market last week. In conversation many of them stated that just as soon as they ceased to receive orders that will take care of their production they will begin shutting down machinery. If this idea is followed out it may be a long time before the effect of this quiet curtailment is appreciated in the trade."

We wish to say that they are on the right track and if the policy of not making goods except upon orders is followed the day will soon come when there will be a sellers' instead of a buyers' market.

The greatest losses made by Southern mills have been upon goods made without orders and later sacrificed.

Women's Short Skirts Cause Unemployment.

Bradford, England.—Short skirts are causing unemployment.

England's textile industry has been hit by the short skirt, which means less fabric for a dress than under the old style.

"Looking at the short, tight and almost sleeveless garments one sees worn by women now, one sees another grievance for the weaver," said John Emsley, president of the Textile Institute.

Give Your Old Address.

In requesting a change of adderss, subscribers should furnish their old address as well as the new one. Our Circulation Department has recently received a number of requests for address changes which did not give the former address, making it impossible to give prompt service in this matter.

Personal News

James Rogers has been promoted to overseer of weaving at the Conestee Mills, Conestee, S. C.

G. V. Hanna, of Union, S. C., has become overseer of weaving at the Watts Mills, Laurens, S. C.

J. C. Clark has resigned as overseer weaving at the Watts Mills, Laurens, S. C.

Robert Campbell has been appointed overseer spinning at the new American Thread Company, Dalton, Ga.

B. L. Andrews has become overseer carding at the Wymojo Mills, Rock Hill, S. C.

Earl Tiller is now night overseer spinning at the Wymojo Mills, Rock Hill, S. C.

R. J. Smith has resigned as overseer weaving at the Baldwin Mills, Chester, S. C.

Joe Newton has resigned as night overseer spinning at the Opp Cotton Mills, Opp, Ala.

J. B. Parker has resigned as superintendent of the Maginnis Mills, New Orleans, La.

Fred L. Mason has become night overseer spinning at the Monaghan Mills, Greenville, S. C.

J. C. Orr is now night overseer spinning at the Opp Cotton Mills, Opp, Ala.

E. D. Hargett has resigned as overseer carding at the Wymojo Mills, Rock Hill, S. C.

George H. Howell has resigned as superintendent of the spinning mill department of the Richmond Hosiery Mills, Rossville, Ga.

J. A. Mooty has been promoted from overseer weaving to assistant superintendent of the Aragon Mills, Aragon, Ga.

J. L. Allen has been promoted from second hand to overseer spinning at the Gainesville Cotton Mills, Gainesville, Ga.

C. D. Thomson has been promoted to second hand in the Thrift plant of the Kendall Mills, Paw Creek, N. C.

J. M. Parker has resigned as second hand in carding at the Industrial Mills, Rock Hill, S. C., to become night overseer carding at the Lockmore Mills, York, S. C.

J. L. Allen has been promoted from second hand to overseer of spinning at the Gainesville Cotton Mills, Gainesville, Ga., succeeding the late George H. Graham.

P. L. Solsbee has resigned as overseer carding at the H. C. Townsend Cotton Mills, Anderson, S. C., and accepted a position at the Pendleton Manufacturing Company, Autun, S. C.

L. W. Radford has been promoted from night overseer to day overseer of carding at the Hartsell Mills, Concord, N. C.

Sam Ingle has been promoted from card grinder to night overseer of carding at the Wymojo Mills, Rock Hill, S. C.

F. H. Hancock, of the Baldwin Mills, Chester, S. C., is now grinding cards at the Wymojo mills, Rock Hill, S. C.

J. J. Barrett, of Charlotte, has accepted the position of overseer of weaving at the Baldwin Mills, Chester, S. C.

Lawrence Hayes, of York, S. C., has become overseer spooling, warping and winding at the Mason Cotton Mills, Kings Mountain, N. C.

Claud Hopkins has been promoted from section to second hand in spinning room at the Gainesville Cotton Mills, Gainesville, Ga.

B. J. Boddell has been promoted from overseer of weaving to superintendent of the Lullwater Manufacturing Company, Greenville, S. C.

Julian Robertson has resigned his position with J. E. Sirrine & Co., Greenville, S. C., to become plant engineer for the North Carolina Finishing Company, Yadkin, N. C.

L. N. Harris has resigned as overseer spinning at the Echota Mills, Calhoun, Ga., to accept a similar position at the Fulton Bag and Cotton Mills No. 2, Atlanta.

D. C. Jolley has resigned as overseer of carding, Addison Mills, Edgefield, S. C., to become overseer of carding at Wallace Manufacturing Company, Jonesville, S. C.

L. B. Garvin has resigned as second hand Greenwood Cotton Mills, Greenwood, S. C., to become overseer of carding, Addison Mill, Edgefield, S. C.

C. F. Parker has resigned as overseer of carding, Wallace Manufacturing Company, Jonesville, S. C., to become overseer of carding, Pacolet Mills, Pacolet, S. C.

W. H. Bigham has resigned as night overseer spinning at the Wymojo Mills, Rock Hill, S. C., and is now overhauling at the Hopedale Mills, Burlington, N. C.

B. W. Bingham has resigned as superintendent of the Prendergast Cotton Mills, Prendergast, Tenn., and will be manager of a new mill to be built at Tellico Plains, Tenn.

L. O. Bunton has resigned as assistant superintendent of the A. M. Smyre Manufacturing Company, Gastonia, N. C., to become superintendent of the Ruby Mill, of the same place.

George C. Imes has resigned as superintendent of the Georgia-Kincaid Mill Number 1, Griffin, Ga., to accept a similar position with the new Highland Mills, of the same place.

MILL NEWS ITEMS OF INTEREST

Columbus, Ga.—The Eagle and Phenix Mills are curtailing to four days a week.

Salisbury, N. C.—The Vance Cotton Mills, producing pajama checks, have discontinued night work.

High Shoals, N. C.—The Manville Jenckes Company has placed contract for additional Humidifiers with the American Moistening Company, Boston, Mass.

Ardmore, Olka.—It is reported that George Beveridge, of the Banning Cotton Mills, Banning Ga., will erect a mill here.

Rhodhiss, N. C.—The Rhodhiss Mills Company, has let contract to the Bahnson Company, Winston-Salem, N. C., for the installation of additional humidifying equipment.

Belmont, N. C.—The regular dividends of five per cent quarterly have been paid by the National and Chronicle Mills.

New Orleans, La.—It is reported that the Couch interests are planning to build a large cotton mill in northern Louisiana. No definite information is available yet.

Gibsonville, Ga.—The Minneola Manufacturing Company, have placed contract for Standard Air Cleaning Equipment with the American Moistening Company, Boston, Mass.

High Shoals, N. C.—Manville Jenckes Company, have placed contract for additional Automatic Control system with the American Moistening Company, Boston, Mass.

Concord, N. C.—The Brown Manufacturing Company has placed contract for humidifier equipment with the American Moistening Company, Boston Mass.

Rome, Ga.—Citizens of Rome have subscribed to $120,000 of the preferred stock of the Southern Brighton Mills to be built here by the Brighton Mills, Passaic, N. J., as reported. Construction of the plant is to be completed by the first of next year.

Whitmire, S. C.—The Aragon-Baldwin Mills, Glenn-Lowry plant, have begun construction of the fifty new homes for the mill village. Contract was let some weeks ago to J. Archie Wliis & Co., of Greenville. J. E. Sirrine & Co., are the engineers.

Rossville, Va.—The National Yarn Processing Company, recently organized here by T. H. McKinney and associates, has let contract to Mark K. Wilson, of Chattanooga, for the erection of the mill building. The plant purchased already has a two story building. The main mill cost $100,000.

Gastonia, N. C.—The Gastonia Weaving Company, has been incorporated with a capital of $10,000 by Jones Fuller, Elizabeth Compton and F. L. Fuller, all of Durham. Plans of the new company have not yet been announced.

High Point N. C.—There is a possibility that a third silk mill will be built here. The Chamber of Commerce is negotiating with an eastern firm relative to locating a plant here.

The Stehli Silk Mills has been in operation here for many years and a new mill is now under construction by the Hillcrest Silk Mills.

Dalton, Ga.—The Boylston-Crown Mills have let contract to the Gallivan Construction Company, Greenville, S. C., for construction of their new addition. Contract for the erection of 27 new homes in the mill village has been let to the LaGrange Lumber and Supply Company., LaGrange, Ga.

The mill building will be 245x200 feet, two stories, brick and steel construction. It wil be the first of the extension planned for the yarn mill bought by the company from the Elk Mills. Roberts & Co., of Atlanta, are the engineers.

Charlotte, N. C.—The New England Waste Company, has purchased a site of 30 acres here and will erect a large storage warehouse. It is also stated that the company will establish a waste reworking plant. The company has maintained Southoccies here for some time. Adolh Leeve, of Boston, is president of the company.

Newberry, S. C.—Stockholders of the Oakland Mills, in a special meeting held in Greenville Tuesday, conformed the contract with the Kendall mills of Boston whereby the eastern firm agrees to purcase the entire production of the Oakland mills, it was learned Wednesday. The agreement involves a considerable amount of money.

In connection with the meeting here, H. P. Kendall, president of the Kendall Mills, purchased a large block of the common stock of the Oakland Mills and will be one of the vice-presidents of the Newberry plant.

There will be no changesin the local management of the Oakland mills as a result of the meeting, it was said. Col. W. H. Hunt will remain president and James N. McCaughrin vice-president and secretary.

Lanett, Ala.—The West Point Manufacturing Company, has let contract to T. C. Thompson and Bros., Charlotte, for building a four story cloth room to cost $150,000. Roberts & Co., Atlanta, are the engineers.

Greenville ,S. C.—Definite decision to enlarge the plant of the Southern Franklin Process Company, as reported last week, has been made and work on the addition has already been begun. The addition will be 2 stories and basement and will cost $40,000. It will virtually double the capacity of the winding department.

Tellico Plains, Tenn.—A new cotton mill to be known as the Tellico Cotton Mills Company, will be erected here, construction on the plant to start May 1. Further details of the plant will be announced within a short time. The mill will managed by B. W. Bingham, who for some time has been superintendent of the Prendergast Cotton Mills, Prendergast, Tenn.

Lancaster, S. C.—The Lancaster Cotton Mills will spend approximately $200,000 for improvements, including the installation of a turbine unit and improvements to the steam plant.

Contracts for the turbine has been let to the Westinghouse Electric and Manufacturing Company, Lockwood, Greene & Co., are the engineers.

Cherryville, N. C.—On account of financial difficulties, the Vivan Spinning Company, has signed an agreement with a creditors committee to turn over the plant to the committee to be operated for the benefit of the creditors, the committee to receive no compensation for a period of two years. C. A. Rudisill, manager of the Carlton Yarn Mills, will have charge of the mill.

D. W. Aderholt, chairman of the committee has written all creditors pointing out that the mill is in very bad condition and that some settlement must be arranged. The letter states that the financial statement of the mill on March 23 shows debts of over $350,000, with practically no assets outside of the mill property, which if placed on the market today would "probably not bring over $70,000 to $90,000." Should the mill be placed in bankruptcy, the letter states, creditors would not realize more than 15 to 20 per cent of the amount of their claims. The larger creditors have practically agreed to acept one fourth of their claims in first mortgage bonds on the plant, of an issue of $100,000, the remainder in two year notes given by the mill. Smaller creditors are being asked by the committee to accept a cash compromise.

Durham Hosiery Mills Net.

Net profits of $137,054 for 1924 was reported by the Durham Hosiery Mills and affiliated companies, against $329,602 the year before. This was equivalent to $4.05 a share earned on the outstanding $2,910,000 of preferred stonck, against $1.00 a share on the combined 87,500 shares of Class A and Class B common stocks after the preferred dividends in 1923. The net profit was computed after interest, depreciation and inventory adjustments.

Principal items in the company's report, with comparison with the 1923 figures, follow: Gross sales, $5,431,694 against $6,079,657 in 1923; balance after expenses, $303,909 against $634,785; total income, $333,923 against $670,554; net profit of $137,054 against $329,602 and after preferred dividends, a deficit of $34,897 against a surplus the year before of $95,762.

Textile Colorists Discuss Dyeing Problem.

Atlanta, Ga.—An enthusiastic meeting of the southern section of the American Society of Textile Colorists and Chemists was held at the Piedmont Hotel here Saturday evening. Rayon, with especial reference to the dyeing of the fiber, was the chief object of discussion.

A representative attendance of some 50 dyestuff and chemical representatives and of cotton and hosiery mill men from Georgia, Alabama and Tennessee was present. F. H. Chase, superintendent of dyeing at the Riverside & Dan River Cotton Mills, Danville, Va., presided as chairman of the section. Harry W. Ormand, of Union Bleachery, Greenville, S. C. secretary, and P. E. O'Neill, of Standard-Coosa-Thatcher Company, Chattanooga, treasurer of the section, were other officers present.

H. W. Rose, of Charlotte, N. C. Southern manager of the Viscouse Company, spoke on rayon, describing the Viscose process of manufacture. He said that rayon was here to stay, outlining the many uses to which it was being applied. E. F. James, of the Philadelphia Textile Dyeing Company, Philadelphia, read a comprehensive paper on "Dyeing of Artificial Silk." Following these addresses, a general discussion was held that proved of much interest.

M. L. Brittain, president of the Georgia School of Technology, Atlanta, welcomed the delegates to the city and spoke of the plans of his institution for enlarging the scope of the textile department.

This was the third meeting of the section, the organization having been effected during the textile exposition in Greenville, October, 1923, and the second meeting held in Charlotte several months ago.

Enthusiasm as to the future and possibilities of the section was evident, and plans were laid for further increasing the membership and enlarging the field of activity and services.

The time and place of the next meeting was left to the governing board.

Cotton Manufacturers to Meet at Asheville.

Spartanburg, S. C.—Asheville, N. C., has been chosen as the convention city for the annual meeting of the South Carolina Cotton Manufacturers Association, to be held early in July. Selection was made at a meeting of the executive commitee of the association in this city. The exact date for the convention has not been set, but it was agreed that the manufacturers probably will assemble July 4.

J. Choice Evins, president of the Clifton Manufacturing company, and head of the State Manufacturers' association, presided at the meeting.

Cone Export & Commission Co. Has New Home

Greensboro, N. C.—The Cone Export & Commission Company has just moved into its new home here, on Greene street, erected at a cost of $200.000. It is two stories and basement, of brick, limestone, tile and marble, designed especially for the business of the concern by Harry Barton, local architect. It has been under construction for the past six months.

The entrance into the buiding leads to a large rotunda, walls of which are panels of walnut, blending with the ivory finish of the dome. On the left is the information desk and telephone exchange. Arranged across the front of the first floor are the offices of Julius W. Cone, president of the company; L. H. Sellars secrtary and general manager; Frank Leak, assistant secretary, and one set aside for the use of the out-of-town representatives. The main room of the first floor is given to the mailing, billing, invoicing and acounting departments, with space railed off for the heads of the departments who handle details of the mill work. All orders pertaining to the goods from the 17 mills selling through the Cone Export & Commission Co. are handled through the main office, both on the way to the various plants and return. This necessitates the maintenance of a large staff.

An automatic telegraph machine is installed in a room by itself in order to keep the noise of its operation from disturbing the office workers.

On the mezzanine floor is a conference room, and the remainder of the space on the mezzanine is reserved for files.

The sample department is on the second floor, where large sample bins, or files, line the inner walls of the room. A separate room for a cotton wire is also on this floor. The cotton offices occupy a large part of this floor in the front of the building on one side and the designer's office and workshop is on the second floor.

In the basement is a ventilating machine, forcing washed air through all parts of the building at all hours of the day. Also in the basement ,a heat regulator insures an even temperature throughout the winter months.

First Textile Motors

The first application of electric motors in the textile industry was made 32 years ago at the plant of the Columbia Mills Company, Columbia, S. C. Fourteen of these motors are still in service and but seven have been rewound. Five of them are running on their original sleeve bearings.

The electrification of the Columbia Mills Company was undertaken by the General Electric Company in April ,1894. Two 500 Kilowatt, 108 r.p.m., 36 cycle generators were installed to furnish the power, the mill being located between 700 and 800 feet from the power plant. The cables were laid in a wooden through which was filled with compound and buried in the ground. The generators are still furnishing power satisfactorily and no trouble has been experienced with the cable.

At the time the installation was made there was no record of any motor having been used in a cotton mill. The motors were the first to be inverted and suspended from the ceiling, and it was the first instance where a motor shaft was extended at both ends.

The normal rating of the motors when installed was 65 horsepower each. During their 32 years of operation the average load has been from 80 to 85 horsepower. Rewinding has been actually necessary on but five of the stators, two having recently been rewound as aprecautionary measure. The only repairs needed by the motors were a minor character. Some of the motors were run, in addition to their 32 years of day operation, for at least 10 years on night operation, giving an equivalent of 42 years of service since the original installation.

At the time the motors were installed they were the largest of that type in horsepower rating which the General Electric Company had made. The largest three-phase induction motors built before that time were 10 horsepower machines, a single 5 horsepower unit being the largest sold.

"Knits off With Less Waste."

There was an unusual error in the advertisement of Sonoco Products Company, Hartsville, S. C., which appeared in the page advertisement in the issue of April 16th.

The item referring to Sonoco Cushion Cone should have read "Knits off with less Waste", which is the truth, while the statement, which appeared in the advertisement was not the truth.

Woven Seersucker Stripe

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when the total distribution is considered. One of the great objections to all fabrics which are made from bleached and dyed yarns is that their appearance is not so regular as cloths which have been produced from grey yarns and then are afterward finished or dyed. The picks in fabrics woven from bleached and dyed yarns are not worked into their positions so smoothly as those which are finished after being woven, and often the reed marks show in such a prominent way much of the desirable fabric effect is lost.

It is true that some styles of grey yarn fabrics show reed marks after they have been finished, but the number is so small in comparison to fabrics made of bleached yarn, that it is not worth while considering them. It is believed that manufacturers could have done much more with crinkle effects produced from grey yarns and with a certain amount of fast color usd in their construction than they have done. Profits are often quite large through the adoption of methods not in general use and makers should allow no opportunities to slip past without making the most of them. Possible one of the greatest advantages in making these cloths from grey yarns is that which is noted in most other styles of fabrics, and is that fine grey yarns can be handled much more satisfactorily and at a much smaller relative cost than bleached yarns of the same character. In the majority of instances it is not possible for colored yarn mills to handle yarns much finer than 50-1, while this is a comparatively low count for many grey cloth makers.

The difficulties in weaving are not especially prominent, but it is not possible for a weaver to operate as many looms on constructions as that analyzed, as it is on similar classes of ginghams, or shirting stripes. The uneven tension on the top beam, and the fact that the threads are reeded quite closely in the dent where the crinkle is produced is likely to cause a certain amount of trouble, though not of an especially serious nature. Whenever a fabric is produced which has a more or less staple sale, and where it is expected to operate looms continuously in the production, it is a paying proposition to advertise the fabrics and create a demand for them. It is certain that today there are very few lines which can be successfully distributed unless this method is taken.

It is possible to sell a certain amount of cloth of a staple nature without advertising but this amount will be neither regular nor will it be large enough to supply the looms with orders. Sometimes the amounts expended for advertising purposes appear large, but when they are distributed over the whole cloth production they are often of a negligible quantity. In certain instances it has been positively proven that lower quality goods can be sold successfully when they are sufficiently advertised.

It is not an especially good policy to advertise goods and sell them because they are cheaper, and contain less value than others, but the instance shows how much influence advertising has in the distribution of fabrics such as that considered. There is no great difficulty in obtaining the weights of the various yarns used together with the weight of the cloth. The methods employed are exactly the same as for any ordinary fabric, the main item of importance being to obtain accurately the take-ups on the warp yarns. In the fabric analyzed the take-up on the crinkle portion was 29 per cent, or 23 per cent more than the ground cloth.

Weaving of Rayon

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shuttle daily and any showing rough spots should be smoothed with sandpaper. Rough shuttles may cause a bad breakout.

The sandpaper on the cloth take-up roll should not be too coarse or it will roughen the Rayon yarn. The perforated tin roller should not be used for the same reason.

Rayon varies somewhat even in the same shipment and may cause streaks in a fabric of all Rayon filling whenever a bobbin change occurs. This can be overcome by using a two-box loom and alternating the picks.

When different brands of Rayon are used in the same mill the safest way to prevent their becoming mixed and causing imperfect cloth is to tint one of the yarns with a color easily washed out in finishing.

The manufacturers of regenerated cellulose silks recommend that the relative humidity in the weave room be kept down to 65 per cent —70 per cent while the manufacturers of the acetate silk recommend as high a humidity as it is possible to maintain. In ordinary practice many mills are sucessfully using the same humidities for Rayon as for cotton.

Some recent tests made to compare the comparative absorption qualities of Rayon showed that a relative humidity of 61 per cent the regenerated cellulose silks, such as Viscose and Tubize, had a regain of 14.8 per cent while the acetate siiks, such as Celanese, had a regain of 6.7 per cent. This variation in regain p[illegible] mercha[illegible] advan[illegible]ich destroy rate relationsh[illegible] between competitors and common markets are severely injurious and often fatal.—Bulletin of National Association of Cotton Manufacturers.

New Dyes Produced.

In the year 1924, commercial production in the United States of many valuable dyes was first reported. These include colors which have been previously imported, in certain cases in large quantities. Their manufacture in this country is an important step toward a self-contained domestic dye industry.

Bulletin on Yarn Costs

The following bulletin on yarn manufacturing costs was issued by the Southern Yarn Spinners Association:

"The group meeting of the coarse yarn spinners held in Charlotte April 7 went fully into a discussion of conditions, costs prices and distribution of products. It was unanimous opinion that to profit by the disastrous experience of the past years it was necessary to regulate production entirely by the volume of business.

"The resolution passed at the annual meting to regulate operations solely by the volume of orders and in the absence of orders to institute immediate curtailment was heartily [illegible] The meeting recommended [illegible] except at prices [illegible] least replacement costs, based on current cotton quotations. A discussion of prices and manufacturing costs brought out the fact that the present market quotations based on current prices were below replacement values.

"It was agreed that numbers 12s yarn under normal manufacturing conditions showed a manufacturing cost of 8.25 cents. This costs inpese. Based on this cost number 12s yarn made out of 24.50 cent cotton shows a total cost of 37.08 cent. To secure replacement value it would cluded all items except selling exbe necessary to sell at 41.50 cents per pound. Market quotations on 12s are 40.50 cents per pound, which is less than replacement costs.

"Enclosed is a chart showing manufacturing costs of 12s yarn based on cotton from 20 cents to 30 cents per pound, also the net yarn prices of number 12s yarn at 35 cents to 55 cents per pound. A comparison between the total costs with any price cotton and net yarn price indicates at which sale can be made at replacem[illegible]t value."

Cost of No. 12s yarn, with cotton from 20 to 30 cents. Manufacturing costs include all expenses except selling and freight, compared with yarn prices less commission, discount and freight.

Cotton	Waste	Mfg. Cost	Total Cost	Yarn Prices	5% Com.	3% Disct.	90c F[illegible]t.	Net Yarn Price
20.00	3.53	8.25	31.78	35.00	1.75	1.00	.9[illegible]	31.35
20.50	3.62	8.25	32.37	36.00	1.80	1.03	.9[illegible]	32.27
21.00	3.71	8.25	32.96	37.00	1.85	1.06	.90	33.19
21.50	3.79	8.25	33.54	38.00	1.90	1.08	.90	34.12
22.00	3.88	8.25	34.13	39.00	1.95	1.11	.90	35.04
22.50	3.97	8.25	34.62	40.00	2.00	1.14	.90	35.96
23.00	4.06	8.25	35.31	41.00	2.05	1.17	.90	36.88
23.50	4.15	8.25	35.90	42.00	2.10	1.20	.90	37.80
24.00	4.23	8.25	36.48	43.00	2.15	1.23	.90	38.72
24.50	4.33	8.25	37.08	44.00	2.20	1.25	.90	39.65
25.00	4.41	8.25	37.66	45.00	2.25	1.28	.90	40.57
25.50	4.50	8.25	38.25	46.00	2.30	1.31	.90	41.49
26.00	4.59	8.25	38.84	47.00	2.35	1.34	.90	42.41
26.50	4.68	8.25	39.43	48.00	2.40	1.37	.90	43.33
27.00	4.76	8.25	40.01	49.00	2.45	1.40	.90	44.25
27.50	4.85	8.25	40.60	50.00	2.50	1.43	.90	45.17
28.00	4.94	8.25	41.19	51.00	2.55	1.45	.90	46.10
28.50	5.03	8.25	41.78	52.00	2.60	1.48	.90	47.02
29.00	5.12	8.25	42.37	53.00	2.65	1.51	.90	47.94
29.50	5.20	8.25	42.95	54.00	2.70	1.54	.90	48.86
30.00	5.30	8.25	43.55	55.00	2.75	1.57	.90	49.78

Obituary

Samuel H. Steele.

Samuel H. Steele, vice-president of Bragdon, Lord & Nagle, publishers of the Textile World, died April 13th at his home in Philadelphia, after an illness of several months.

Mr. Steele was one of the best known publishers in the textile industry and had been associated with the business since 1903. He began as a circulation and advertising solicitor and later became a member of the firm of Bragdon, Lord & Nagle when the Textile Record and Textile Manufacturers Journal were consolidated in 1915.

Mr. Steele is survived by his widow, one son and one daughter.

George H. Graham.

George H. Graham, age 40, overseer of spinning room at the Gainesville Cotton Mills, Gainesville, Ga., ended his life recently at the home of his father and brother, B. W. C. and T. N. Graham, by firing a pistol shot through his temple.

Mr. Graham had been with the Gainesville Cotton Mills for several years as overseer of the spinning, spooling and warper rooms, and was considered as one of the valuable men.

He left no message as to why he committed the deed.

He was a World War veteran and spent several months overseas during the conflict.

Jas. E. Mitchell Dead.

Jas. E. Mitchell, founder of the yarn house of Jas. E. Mitchell & Co., of Philadelphia, died Monday morning at the age of 87.

Mr. Mitchell founded his yarn business before the Civil War and had successfully conducted a strictly commission business since the beginning.

He was very highly regarded for his business integrity and in addition to his many other positions, was a director of the Ninth National Bank of Philadelphia.

At the head of the yarn business he will be succeeded by his nephew, John J. Mitchell, who has been the active manager for a number of years.

Knit Goods Production in 1923

Washington, D. C.—Products turned out during 1923 by establishments engaged primarily in the manufacture of knit goods were valued at $848,176.734, incomparison with $634,073,895 for 1921 (the last preceding census year), an increase of 33.8 per cent, acording to data collected by the Department of Commerce at the biennial census of manuaftcures 1923, and made available recently.

Of this total, $378,732,878 was contributed by hosiery, $160,901,752 by underwear, $197,158,178 by fancy knit goods (sweaters, jerseys, bathing suits, scarfs and shawls, headwear, neckties, gloves, mittens, etc.), $68,520,678 by knit cloth for sale as such, and $42,863,348 by minor products, including receipts for work done on contract. All these groups of products show substantial increases as compared with 1921.

The survey reveals that there was a considerable rise in the number of factories in operation during the census year, 2,323 establishments submitting reports to the department as against 2,078 in 1921, a gain of 11.8 per cent.

Working forces are shown to have been enlarged by 20 per cent the average number of wage earners—not including salaried officers and employes nor proprietors and firm members—on the factory payrolls for 1921 and 1923 being 161,-000 and 194,244, respectively. During 1923 there were 198,545 operatives employed during May, the maximum month, whereas in the preceding census year 187,037 workers had employment during the peak month, which was November.

Wages paid out by the reporting factories during the year under review totaled $168,271,584. When comparison is made with the figures for 1921, which were placed at $132,-190,349, an increase of 27.3 per cent is shown.

It is interesting to note that whereas the various establishments included in the survey expended $484,020,075 for materials (including fuel, container and mill supplies), the value added by manufacture was $364,156,659, thus bringing the total worth of the products up to $484,176,734. These figures, respectively, are above those for 1921, for which year they were reported at $360,457,838 and $273,616, 062.

Hosiery Production Data.

Of the $378,732,878 hosiery output for 1923, $99,846,231 represents the worth of the production of half-hose, while the value of hose turned out was $278,886,647, increases of 62.9 per cent and 21.7 per cent, respectively, over 1921.

In all, 97,432,927 dozen pairs of hosiery were manufactured, of which 11,412,029 dozen pairs were full-fashioned and 86,020,898 dozen pairs seamless, being gains of 21.4, 36.4 and 19.7 per cent, in order, over the previous census year.

Half-hose made in the period under review totalled 37,817,538 dozen pairs, weheras 59,615,389 dozen pairs, whereas 59,615,389 dozen pairs of hose were produced, these figures being 34.3 and 14.5 per cent above those for 1921.

Underwear manufactured in 1923 was worth 19.3 per cent more than that made in 1921. There were 12,-874,687 dozens of pieces of shirts and drawers made up, in comparison with 11,711,624 dozens, a gain of 9.9 per cent, while union suits increased in production by 15.8 per cent, the figures being 10,745,979 dozens for 1923 and 9.283,784 during 1921.

In fancy knit goods, production increased all along the line with but two exceptions, these being sueded cotton gloves, and gloves and mittens not sueded. In the case of the former the decline amounted to 79.8 per cent, and in the latter 9.8 per cent.

In the manufacture of knit cloth only one decrease in output was recorder, that being jersey cloth, the decrease being 10.9 per cent.

Of the 2,323 establishments reporting for 1923, 886 were located in New York, 610 in Pennsylvania, 109 each in New Jersey and North Carolina, 87 in Massachusetts, 72 in Tennessee, 6 in Wisconsin, 64 in Illinois, 39 in Ohio, 30 in Calfornia, 29 each in Georgia and Michigan, 25 in Connecticut, 22 in Rhode Island, 18 each in Minnesota and New Hampshire, 13 in Indiana, 12 in South Carolina, 11 each in Utah and Virginia, 9 in Vermont, 8 each in Maryland and Washington, 6 in Alabama, 5 in Kentucky, and the remaining 27 in 10 other States.

Still Weaves Her Clothes.

A woman 102 years old who never bought a dress in her life is Mrs. Sibby Overman, of Liberty, N. C. Bargain sales have never tempted Mrs. Overman from her life-long practice of making her clothes from homespun, colored with dyes made by herself from red oak bark, cedar tops, walnut hulls and similar materials.

Textile Industries to be Represented at the Paris Exposition.

A number of the textile manufacturing industries intimately connected with the Exposition of Modern Decorative and Industrial Art, which opens in Paris in May, will be represented by delegates, who will accompany the commission appointed by Secretary Hoover of the Department of Commerce.

The delegates representing the various associations are as follows: Silk Associations of America represented by B. Edmund David of New York, Paul C. Debry of Duplan Silk Corp., D. R. Grulich of Cortecelli Silk Co., E. Irving Hanson of H. R. Mallinson Co., W. H. Scott of Susquenanna Silk Mills and Walter Terhune of Pelgram & Meyer; National Association of Cotton Manufacturers represented by J. S. Lawrence of Lawrence & Co., R. H. Leonard of Ipswich Mills and E. F. Greene of Pacific Mills Albert Blum of United Piece Dye Works, representing National Asociation of Finishers of Cotton Fabrics.

Dye Production Declines in 1924

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shown a rapid increase since 1917. At the present time, the United States is producing about one-half of its requirements of this group of colors. During 1924 commercial production of several important vat dyes was reported for the first time; these include Golden Orange R R T and G; Hydron Orange R, and Scarlet B B, and several blues and browns.

In 1924 the production of vat dyes, other than indigo, was 1,340,000 pounds, as compared with a production of 1,766, 383 pounds in 1923, a decline of 25 per cent which is slightly less than the decline in the total output of all dyes.

New Automatic Welders.

Following several years of development and trial, the General Electric Company is now marketing a line of automatic arc welding equipments. These equipments, sold either as complete units or as separate parts, have been especially designed for quick, efficient and economical welding where quantity production is a factor. Heretofore, it has been the custom to supply the separate part only.

The new outfit is expected to find its principal application in the construction of such standard products as tanks, boilers, cans, axle housings, and pipe, and also for repairing undercut shafts or axles and building up sharp flanges on car wheels. Its field of greatest usefulnss will be in the manufacture of storage vessels where the static load is not greater than 10 pounds per square inch and where the thickness of the metal to be welded is not less than number 16 gauge.

Outstanding among the advantages claimed for these automatic equipments is the resulting increase in speed of production following their installation. Estimates by General Electric engineers, based on actual production, show that this increase in speed is especially marked when comparison is made between the automatic arc welder and either hand arc welding or hand gas welding. A complete outfit can be operated by a man and helper, while the completion of an equal amount of hand work in the same time would necessitate the use of four or more men. Estimates also indicate a lower overhead expense than gas welding, excluding the item of labor. The use of pushbutton control provides simplicity and ease in operation. Uniformity of finished product and space saving by the reduction of the number of workers and quantity of stock on hand among the other advantages claimed for this equipment.

A complete outfit consists of an automatic welding head and control panel, travel carriage and clamping device. Where it is desired, in order to meet special circumstances in any plant, the travel carriage and other component parts of the equipment may be assembled by the purchaser with his own device for holding the word.

Index To Advertisers

Where a — appears opposite a name it indicates that the advertisement does not appear in this issue.

Chemistry At The Size Kettle

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ficient lubricants replacing tallow at the size kettle.

For a time there appeared a theory that nothing that could not be readily dissolved in water could or should be used in the size kettle and only as recently as ten and fifteen years ago the life of many weavers was made miserable by attempts to use sulphonated castor or corn oil, treated fish oils, rosin soap and all the nostrums of quack science.

Another method of modification suggested every time a brewery has a surplus stock of malt syrup is by means of malt diastase, placed on the market under various names. In the last twenty-five years this method has been advocated at four or five definite periods but its use has always been brief for the action of diastase in the size kettle is to convert the starch into sugar (maltose) thus destroying the very material (starch) on which depends the value of the size and this process is therefore worse than useless.

The manufacturers of thin boiling starches also convert the starch into sugar though not in so obvious a manner but nevertheless have caused you untold trouble, with attending decreased production for the last five or six years.

It is not necessary to convert starch at the size kettle in order to produce the best sizing.

The question before us is to discuss the function of a properly compound sizing material. It should blend with and act on the starch in such manner as to develop the full strength of the normal starch and at the same time impart to it the necessary flexibility and lubrication permitting the dressing to adhere to the yarn under all the stress and strain of the loom. Unless the size does this, and all of this, it fails in its function regardless of row fine the warps feel or appear at the slasher.

The action of sizing compounds is twofold, one physical in that is promotes the proper dispersion of the various softening and lubricating materials; the other chemical on which depends the correct effect on the starch. This extremely mild process develops the life and flexibility of the resulting film. The theory of this action I do not propose to discuss, only the results of it being of importance to the weaving fraternity. Without this chemcial action you produce a film which when fresh prossesses a fair degree of flexibility and which yields yarns which at the slasher appear to be nicely sized. With age, however, this film soon becomes harsh and brittle and during the weaving these warp yarns do not produce the results expected. The weaving room soon takes the aspect of a snow scene and production decreases in quantity as well as in quality.

Where the starch has been treated scientifically we find that the yarns are unchanged with age that in the loom and in the cloth the warps retain the strength and weight acquired at the slasher. As some of the warps remain in the loom as much as six weeks or longer every one of us appreciates that the permanency of the size film is its most important factor.

Sizing is the keystone in the arch connecting the spinning and the weaving of the yarn, and this applies not only to the cotton and artificial silk fibres in which this audience is particularly interested but applies to carpet warps just as well as it also applies to the manufacture of the finest Merino fabrics.

You may spin your yarns as evenly and as carefully as you will, adjust your loom so that absolute synchronization is attained, then size your yarns when the starch is carelessly measured or weighed, the compound added by similar guesswork, and the whole cooked or half cooked as the exigency of the occasion demands, and you will not and cannot get efficient production.

The proper handling and proportioning of the compound is just as important to efficient operation as is the selection of the compound in the first place. It must be used with the same amount of the same starch, mixed and boiled with the same amount of water, for the same length of time not once or twice, but each time and every time a batch of size is made, and for these reasons we strongly urge the installation of devices that will remove the uncertainty of haphazard operation along with the use of competent chemical size service.

Most of the family theories advocated have had but short life and are discarded and forgotten, but there comes from time to time the echo of such false doctines and analysts of bleacheries will convey a false impression by telling you that sizing ingredient contains so much soluble and so much insoluble, so much saponifiable and so unsaponifiable, leaving you to judge what may or may not be removable in the processes of bleaching, dyeing and finshing.

To go into a discussion of removables in the finishing processes involves the consideration of the physico chemical properties of colloids and the advance made in this field has been very considerable of late—but it is clear that many so called unsaponifiables or insolubles are more readily removed than some solubles, and the many tend to promote rather than interfere with the finishing processes.

Considerable advance is also being made in the study of the fundamentals of bleaching and particularly in the study of reagents promoting the cleaning of cloths preparatory to bleaching. Very samll quantities of such material as natural pine oils, tetraline, hexaline, and other hydrogenated products have been found to have profound effects in the scouring bath.

Let us also remember one fact which all bleachery chemists seem to evade or overlook, which is that from an ordinary ton of cloth, bleaching will remove on the average about 100 pounds of the cotton waxes, gums and cellulose; also

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Attendance at Weavers Meeting

Among those attending the Weavers' Meeting in Anderson were:

Adams, R. G., O-Weaving, Ware Shoals Mfg. Co., Ware Shoals, S. C.
Alexander, J. C., Salesman, Corn Products Sales Co., Greenville, S. C.
Allen, M. G., O-Weaving, Alexander Mfg. Co., Forest City, N. C.
Anderson, W. S., Carolina Specialty Co., Charlotte, N. C.
Aspden, Thomas, Salesman, H. & B. American Machine Co., Atlanta, Ga.
Bagwell, R. F., Supt., D. E. Converse Co., Glendale, S. C.
Baker, H. U., Salesman, Acme Loom Harness & Reed Co., Greenville, S. C.
Baker, J. H., Cloth Room, Hartwell Mills, Hartwell, Ga.
Batson, Louis P., Sou. Rep., Shambow Shuttle Co., Greenville, S. C.
Beacham, J. D., Supt., Chiquola Mfg. Co., Honea Path, S. C.
Bevill, S. H., Weaving, Orr Mill, Anderson, S. C.
Bishop, D. E., O-Weaving, Clifton Mfg. Co., Converse, S. C.
Bobo, J. L., O-Weaving, Anderson Mills, Anderson, S. C.
Bowen, B. H., Overseer, Alice Mfg. Co., Easley, S. C.
Bowen, R. L., O-Weaving, Norris Cotton Mills, Cateechee, S. C.
Bradford, H. H., O-Weaving, Grendel Mill No. 1, Greenwood, S. C.
Brown, L. L., Supt., Clifton Mfg. Co., Clifton, S. C.
Burgess, J. H., Weaver, Mollohon Mill, Newberry, S. C.
Burgess, J. F., Carder, Belton Mills, Belton, S. C.
Burnham, B. R., Supt., Whitney Mfg. Co., Whitney, S. C.
Burnham, W. H., Salesman, Parks-Cramer Co., Charlotte, N. C.
Campbell, A. L., Weaver, Pointsett Mills, Greenville, S. C.
Cannon, J. M., Supt., Easley Mill, Easley, S. C.
Cantrell, E. L., O-Weaving, Alexander Mfg. Co., Forest City, N. C.
Carlton, T. W., O-Spinning, Equinox Mill, Anderson, S. C.
Carter, John, O-Spinning, Abbeville Cotton Mills, Abbeville, S. C.
Casey, J. E., Loom Fixer, Hartwell Mill, Hartwell, Ga.
Chapman, Jas. A., Jr., V.-Pres. and Supt., Inman Mills, Inman, S. C.
Chapman, H. E., O-Spinning, Pacolet Mfg. Co., Pacolet, S. C.
Cheatham, R. J., Textile Dept., Clemson College, Clemson College, S. C.
Christopher, F. B., O-Weaving, Woodside Mills, Greenville, S. C.
Clark, David, Editor, Southern Textile Bulletin, Charlotte, N. C.
Clark, C. C., Salesman, Hart Products Corp., Spartanburg, S. C.
Clark, P. J., Supt., Anderson Cotton Mills, Anderson, S. C.
Cobb, A. S., Overseer, Anderson Cotton Mills, Cateechee, S. C.
Cofield, E. P., Supt., Brogon Mills, Anderson, S. C.
Coleman, P. W., Student, Clemson College, S. C.
Cooper, C. T., Asst. Supt., Orr Cotton Mills, Anderson, S. C.
Crow, D. J., O-Weaving, Easley Mill No. 3, Liberty, S. C.
Crow, Smith, O-Carding, Drayton Mills, Spartanburg, S. C.
Culberson, W. J., O-Weaving, Woodside Mill, Fountain Inn, S. C.
Davis, A. B., Weaver, Jackson Mills, Iva, S. C.
Davis, W. F., Supt., Brandon Mills, Greenville, S. C.
Deal, Ralph M., Salesman, Crompton & Knowles Loom Works, Charlotte, N. C.
Dickson, B. R., Supt., Greenwood Mill, Greenwood, S. C.
Dill, C. P., Weaver, Brandon Mill, Greenville, S. C.
Dill, H. E., O-Weaving, Enterprise Mfg. Co., Augusta, Ga.
Dilling, Marshall, Supt., A. M. Smyre Mfg. Co., Gastonia, N. C.
Eaton, Robt. K., Prof., Clemson College, S. C.
Einstein, Max, V.-Pres., Standard Chemical Products, Inc., Charlotte, N. C.
Ellis, P. W., Asst. Supt., Anderson Cotton Mills, Anderson, S. C.
Escott, G. S., Associate Mgr., American Wool and Cotton Reporter, Boston, Mass.
Ezell, W. F., O-Weaving, Louise Mill, Charlotte, N. C.
Fairbanks, G. H., Atlanta, Ga.
Federline, J. R., Spinner, Belton Mills, Belton, S. C.
Fennell, J. B., O-Weaving, Pacific Mills, Columbia, S. C.
Flinn, W. L., Night Weaver, Toxaway Mills, Anderson, S. C.
Franks, E. A., Supt., Drayton Mills, Spartanburg, S. C.
Freeman, W. C., Textile Student, Clemson College, S. C.
Gaillard, J. Frank Salesman, Stodghill & Co., Atlanta, Ga.
Gibson, W. H., Jr., Union-Buffalo Mills, Union, S. C.
Gossett, A. R., O-Weaving, Sibley Mfg. Co., Augusta, Ga.
Greer, W. W., Salesman, Seydel Chemical Co., Jersey City, N. J.
Grimes, M. T., Supt., Gluck Mills, Anderson, S. C.
Hamby, G. B., O-Weaving, Abbeville Cotton Mills, Abbeville, S. C.
Hammond, W. E., Supt., Balfour Mills, Inc., Balfour, N. C.
Harris, Carl R., Asst. Supt., Inman Mills, Inman, S. C.
Harrison, S. E., Barber-Colman Co., Greenville, S. C.
Haskins, L. L., Sou. Rep., Akron Belting Co., Greenville, S. C.
Howard, P. H., Sou. Industrial Mgr., Fuller Brush Co., Charlotte, N. C.
Howard, W. F., O-Weaving, Pacific Mills, Lyman, S. C.
Hughes, A. Y., O-Weaving, Gluck Mills, Anderson, S. C.
Hughes, C. D., O-Cloth Room, Seneca, Seneca, S. C.
Humphrey, L. Z., Brogon Mills, Anderson, S. C.
Hunt, B. E., O-Carding, Victor-Monaghan Co., Walhalla, S. C.
Hunter, H. P., Supt., Equinox Mill, Anderson, S. C.
Hurt, A. P., Supt., Augusta Factory, Augusta, Ga.
Jackson, F. C. N., Salesman, Standard Chemical Products, Inc., Providence, R. I.
Kates, G. S., O-Cloth Dept., Wellington, Sears & Co., Anderson, S. C.
Kay, P. A., O-Weaving, Easley Mill, Liberty, S. C.

Kendrick, W. M., Salesman, A. W. Harris Oil Co., Providence, R. I.
King, J. S., Supt., Woodside Mill, Fountain Inn, S. C.
Klinck, John, Asst. Supt., Sibley Mfg. Co., Augusta, Ga.
Knotts, W. T., Student, Clemson College, S. C.
Lattimore, B. M., Salesman, Charlotte, N. C.
Layton, R. H., O-Carding, Anderson Cotton Mills, Anderson, S. C.
League, D. W., O-Weaving, F. W. Poe Mfg. Co., Greenville, S. C.
LeClair, E., Salesman, Atlanta Harness & Reed Mfg. Co., Atlanta, Ga.
Leopard, C. L., O-Weaving, Arkwright Mills, Spartanburg, S. C.
Ligon, Robt. E., Genl. Mgr., Gluck and Equinox Mills, Anderson, S. C.
Little, F. C., O-Weaving, Blair Mills, Belton, S. C.
Lockman, L. C., Service Man, Draper Corp., Atlanta, Ga.
Longley, J. M., Student, Clemson College, S. C.
Lowe, B. H., O-Weaving, Monarch Mills, Union, S. C.
Lucius, J. T., Piedmont Supply Co., Greenville, S. C.
Lyons, J. A., Supt., Orr Cotton Mills, Anderson, S. C.
McAbee, A. P., O-Weaving, Social Circle Cotton Mill, Social Circle, Ga.
McAllister, J. M.
McCall, Marvin, Jr., Whitney Mfg. Co., Whitney, S. C.
McCutche, E. F., Night Weaver, Mollohon Mill, Newberry, S. C.
McGarity, P.,, Supt., Mills Mill, Greenville, S. C.
McKay, L. A., Weaver, Woodside Mill, Simpsonville, S. C.
McMahon, C. L., Henrietta, N. C.
McNeill, J. G., O-Weaving, Greenwood Cotton Mills, Greenwood, S. C.
McNeill, T. M., Supt., Monarch Mills, Union, S. C.
Mattison, C. A., O-Weaving, Courtenay Mfg. Co., Newry, S. C.
Meikle, A., Supt., F. W. Poe Mfg. Co., Greenville, S. C.
Mills, W. H., Seydel-Thomas Co., Atlanta, Ga.
Mitchell, J. B., Weaver, Belton Mills, Belton, S. C.
Moore, Wm. M., Supt., Globe Mfg. Co., Gaffney, S. C.
Moreland, J. T., Moreland Sizing Co., Spartanburg, S. C.
Morgan, G. C., Weaver, Seneca Co., Seneca, S. C.
Moss, L. S., Brogon Mills, Anderson, S. C.
Mullins, H. D., Student, Clemson College, S. C.
Neal, L. F., O-Weaving, Ninety-Six Mill, Ninety-Six, S. C.
Noblett, J. G., O-Weaving, Easley Mill, Easley, S. C.
Oliphant, A. D., Sou. Mgr., Textile World, Greenville, S. C.
Orr,, M. P., Pres., Orr Cotton Mills, Anderson, S. C.
Osteen, R. T., Southern Textile Specialty Co., Greenville, S. C.
Padgett, C. M., Supt., Seneca Co., Seneca, S. C.
Perry, Hext M., Salesman, Detroit Graphite Co., Greenville, S. C.
Pettit, C. W., Supt., Ninety-Six Mill, Ninety-Six, S. C.
Phillip, Robert W., Associate Editor, Cotton, Atlanta, Ga.
Phillips, W. L., Supt., Social Circle Cotton Mills, Social Circle, Ga.
Pitts, J. H., Abbeville Cotton Mills, Abbeville, S. C.
Plonk, T. M., Pres. and Treas., Globe Mfg. Co., Gaffney, S. C.
Pollard, A. H., O-Cloth Room, Woodside Mill, Greenville, S. C.
Pollard, P. W., Supt., Woodside Mill, Simpsonville, S. C.
Poole, J. K., O-Weaving, Whitney Mfg. Co., Whitney, S. C.
Poole, R. W., Service Man, Draper Corp., Atlanta, Ga.
Pope, T. H., Student, Clemson College, S. C.
Quinn, Peter T., Service, Draper Corp., Atlanta, Ga.
Rakestraw, S. P., Sou. Agt., Seydel Chemical Co., LaGrange, Ga.
Ramey, B. W., O-Weaving, Alice Mfg. Co., Easley, S. C.
Ramsey, C. R., Weaver, Globe Mfg. Co., Gaffney, S. C.
Reeves, C. A., O-Cloth Room, Anderson Cotton Mills, Anderson, S. C.
Reeves, J. B., O-Cloth Room, Jackson Mills, Iva, S. C.
Richardson, D. B., Social Circle Cotton Mill, Social Circle, Ga.
Riddle, C. R., Weaver, Pacific Mill, Columbia, S. C.
Rikard, C. C., O-Cloth Room, American Spinning Co., Greenville, S. C.
Robinson, J. J., O-Weaving, Limestone & Hamrick Mills, Gaffney, S. C.
Rogers, H. O., Supt., Hartwell Mills, Hartwell, Ga.
Rogers, G. D., Electrician, Belton Mills, Belton, S. C.
Rogers, W. F., O-Spinning, D. E. Converse Co., Glendale, S. C.
Runge, H. E., Salesman, Draper Corp., Atlanta, Ga.
Senn, D. R., Asst. Supt., Enterprise Mfg. Co., Augusta, Ga.
Seydel, Herman, Mgr., Seydel Chemical Co., Jersey City, N. J.
Seydel, Paul, Pres., Seydel-Thomas Co., Atlanta, Ga.
Shannon, W. B., O-Weaving, Victor-Monaghan Co., Walhalla, S. C.
Sharp, J. M., Student, Clemson College, S. C.
Shelton, J. B., Supt., Mayflower Mills, Cramerton, N. C.
Short, D. F., Spartanburg, S. C.
Shull, W. G., Salesman, Arnold, Hoffman & Co., Greenville, S. C.
J. W. Simmons, Equinox Mill, Anderson, S. C.
Sloan, S. M., American Supply Co., Greeenville, S. C.
Smith, H. G., Boss Weaver, Beaumont Mfg. Co., Spartanburg, S. C.
Smith, Hampton, Mgr., Steel Heddle Mfg. Co., Greenville, S. C.
Smith, P. A., Supt., Pacific Mills, Lyman, S. C.
Smith, W. A., Glendale, S. C.
Smith, W. T., O-Slashing, Greenwood Mill, Greenwood, S. C.
Sokol, Samuel, Cohen & Leventer, New York City.
Spake, J. O., Greenville, S. C.
Stilwell, W. D., Carder, Mollohon Mfg. Co., Newberry, S. C.
Stimson, S. C., Salesman, Bahnson Co., Winston-Salem, N. C.
Stover, Chas. G., Corn Products Refining Co., Greenville, S. C.
Strang, Peter M., Andrews Loom-Reed & Harness Works, Spartanburg, S. C.
Sullivan, H. E., O-Weaving, Gaffney Mfg. Co., Gaffney, S. C.
Summer, E. S., Genl. Supt., Mollohon Mfg. Co., Newberry, S. C.
Thomason, F. L., Salesman, N. Y. &

N. J. Lubricant Co., Greenville, S. C.
Tennent, A. B., Student, Clemson College, S. C.
Thomas, S. C., Salesman, Moreland Sizing Co., Spartanburg, S. C.
Thomason, L. W., Sou. Agt., N. Y. & N. J. Lubricant Co., Charlotte, N. C.
Thompson, W. H., Cloth Room, Courtney Mfg. Co., Newry, S. C.
Walker, A. H., O-Weaving, Aragon Mills, Rock Hill, S. C.
Warren, C. H., Draper Corp., Atlanta, Ga.
Watson, A. H., Mgr., Chas. A. Schieren Co., Atlanta, Ga.
Watkins, J. Frank, Anderson, S. C.
Webb, C. D., Weaver, Augusta Factory, Augusta, Ga.
White, H. B., O-Weaving, D. E. Converse Co., Glendale, S. C.
Whitley, C. W., O-Weaving, Osage Mfg. Co., Bessemer City, N. C.
Williams, C. L., Service Man, Draper Corp., Atlanta, Ga.
Widdup, W. R., Salesman, Andrews Loom Reed & Harness Co., Spartanburg, S. C.
Wilkins, J. R., O-Weaving, Pacolet Mfg. Co., Pacolet, S. C.
Williams, A. R.,, Weaver, Hartwell Mills, Hartwell, Ga.
Williams, D. W., O-Weaving, Pacolet Mfg. Co., Trough, S. C.
Williams, W. B., O-Weaving, American Spinning Co., Greenville, S. C.
Wood, Jas. B., Monarch Mills, Union, S. C.
Wood, H. H., Steel Heddle Mfg. Co., Greenville, S. C.
Wood, W. K., Supt., Grendel Mills No. 1, Greenwood, S. C.
Woolley, Vasser, Jr., Seydel-Thomas Co., Atlanta, Ga.
Worth, H. P., Salesman, Carolina Specialty Co., Charlotte, N. C.

Chemistry At The Size Kettle

(Continued from Page 31)

about 100 pounds of starch and only about one or two pounds of any other sizing lubricant or chemical, and you should advise your finishing plants of these fundamentals when they blame you for some of their own misdeeds or shortcomings.

The important object of the fraternity which I represent is to have a thorough appreciation of the above facts and to promote the removal of the starch and natural gums and waves to the better preservation of the cellulose of the fibre—that this service is being rendered is shown by the ever increasing use of chemical sizes.

These are the fundamentals of the chemical processes under discussion and it is evident that the science of correct sizing rests on the effect on the starch by the chemicals in the sizing compound. The qualities of the resulting film is determined by the character of the chemicals, as well as by the proportion in which they are combined.

Practice has shown you that it is not possible to embody all of the required ingredients into a pinch or thimble full of magic—but that the preparations which give the best loom production are those wherein every phase of the problem is duly comprehended and provided for.

In conclusion and before answering any question which may be asked let me repeat that the character of the size film has much to do with your weaving results, for else how could mills similarly equipped obtain 89, 90 and 91 per cent with one kind of size on the popular Broad Cloth construction whereas neighboring plants using the same cotton, the same machinery and just as good yarn only produce seventy to seventy-five. Such difference between good and poor weaving production will surely determine the profit or less of your operation.

More Spindles Active in March

Washington, D. C.—Cotton spinning showed increased activity in March as compared with February, the census bureau's report today showing active spindle hours to have been 8,599,440,113, or an average of 227 per spindle in place against 7,868,113,831 or an average of 208 in February this year and 7,072,965,368 or anaverage of 187 in March a year ago.

Spinning spindles in place March 31 numbered 37,809,876 of which 33,225,182 were active at some time during March, compared with 37,875,960 and 33,277,189 for February this year and 37,761,970 and 32,392,171 in March a year ago. The average number of spindles operated in March numbered 37,670,580, or at 99.6 per cent capacity on a single shift basis, compared with 37,865,700 or at 100.0 per cent capacity in February this year and 31,125,530 or at 82.4 per cent capacity in March last year.

Brancroft and Eddystone Finishing Plants Merged.

Joseph Bancroft & Sons Co., of Wilmington, Del., has acquired controlling interest of the Eddystone Manufacturing Company, Eddystone, Pa. John Macadam, formerly secretary and works manager of the Eddystone, and now vice-president of Joseph Bancroft & Sons Co., has been elected president of the Eddystone Manufacturing Company.

William Percy Simpson retires as president and treasurer of the Eddystone concern, and also as a director, having disposed of his interests to the Bancrofts.

Clark's Cotton Records

Statistics for Week Ending April 18, 1925.

	1925.	1924.	1923.
Visible Supply American	4,929,000	3,631,000	3,706,000
Into sight for week	121,000	104,000	77,000
Mill takings during week	243,000	172,000	177,000
Mill takings since Aug. 1st.	11,425,000	9,022,000	10,152,000
Exports during week	131,000	85,000	66,000
Exports since Aug. 1st.	7,145,000	4,736,000	4,039,000

Government Reports.

	1925.	1924.	1923.
Acreage this season	40,403,000	38,709,000	34,016,000
Indicated crop July 25	12,144,000	11,412,000	11,065,000
Indicated crop middle of July	11,934,000		
Indicated crop end of July	12,351,000	11,516,000	11,449,000
Indicated crop middle of Aug.	12,956,000		
Indicated crop end of Aug.	12,787,000	10,788,000	10,575,000
Indicated crop middle of Sept.	12,596,000		
Indicated crop end of Sept.	12,499,000	11,015,000	10,135,000
Indicated crop middle of Oct.	12,675,000		
Indicated crop end of Oct.	12,816,000		
Indicated crop middle of Nov.	12,992,000		
Indicated crop end of Nov.	13,153,000		
Ginned to Oct. 1st	4,527,671		
Ginned to Oct. 18th	7,600,826	6,415,145	6,078,321
Ginned to Nov. 14th	11,163,400		
Ginned to Dec. 1st	12,225,000		
Ginned to Jan. 16, 1925	13,308,037		
Ginned to March 20 (final report)	13,618,751		
Carryover beginning cotton year	2,319,000	2,573,000	4,879,000

Cotton Exports.

Following is a comparison of the exports by months in running bales, including linters:

	1924-25.	1923-24.	1922-23.
August	277,641	244,415	272,808
September	737,010	689,435	378,390
October	947,556	781,722	798,664
November	1,306,000	770,002	858,337
December	1,076,000	845,581	607,853
January, 1925	1,076,000	546,253	473,436
February	818,838	482,146	359,657
March	734,697	332,168	318,210
April	----	320,774	259,984
May	----	326,357	160,368
June	----	230,979	214,851
July	----	211,633	171,469
		5,772,000	4,864,027

American Consumption of All Kinds of Cotton, Excluding Linters.

(In running bales, 000s omitted.)

	1924-25		1923-24		1922-24	
	Per Month	Per Season	Per Month	Per Season	Per Month	Per Season
August	357	357	492	492	526	526
September	435	793	484	975	494	1,020
October	530	1,322	542	1,517	534	1,554
November	492	1,814	532	2,049	579	2,133
December	533	2,347	462	2,510	529	2,663
January 3	589	2,924	577	3,088	610	3,273
February, 1925	550	3,324	508	3,595	567	3,840
March	582	3,874	484	4,079	624	4,464
April	----	----	480	4,559	577	5,041
May	----	----	414	4,991	621	5,661
June	----	----	350	5,341	542	6,203
July	----	----	347	5,688	463	6,666

Cotton Goods

New York.—Cotton goods markets were rather quiet during the week. The demand for unfinished goods was light about the only activity reported being sales of a few wide print cloth constructions for April and May delivery and some for May to July delivery. Sheetings, drills, osnaburgs and other similar goods were dull and sales were small. Prices were somewhat lower.

The most encouraging development of the week was the larger sale of wide print cloths ,total sales having been as high as 150,000 pieces, the largest weekly total in some time. Sales of sheeting for the bag trade and converting purposes were reported as large as 50,000 pieces. The bulk of the sales were made for May delivery, but some run into June, July and several into August. Future deliveries were quoted ¼ to ½ cent off spot prices

Finished lines were not so active as the unfinished goods and prices weakened to some extent.

There were small sales of plain and stripe sateens for spot delivery, 20 cents being the highest price reported for 140x76s. A large sale of imported goods, 140x190s combed was noted at 21½ cents. There was a fairly good demand for voiles throughout the week, although orders were usually small. Buyers were interested chiefly in spot and prompt delivery.

Inquiry for the fabrics was much better, but very low prices were reported on sales. The business done exceeded 500,000 pounds. Less than 53 cents was noted on peeler cords of 23, 5-5 ply.

A better inquiry for duck developed towards the end of the week, but failed to materialize into large orders. Most sales were confied to small lots for quick shipment, the price basis remaining practically unchanged.

There have been no reports of interest in pajama checks. Second hands have been offering 72x80 at 10½ and 64x60s at 8½; at various times during the week there were reports of being able to duplicate these quotations in first hands with bids for quantity.

For 37-inch, 3.95 yard drills, 10½ cents net first hands seemed general with reports of one-eighth better in second hands; 11⅝ to 11¾ cents net the last heard in 37-inch, 3.50 yard; 16½ cents net reported in second hands for 37-inch, 2.35 yard and 16½ to 16¾ cents in first hands.

The Fall River cloth market has continued dormant for the week, trading having been the lightest for any week in the past six months. It may be that the sales will total 15,000 pieces for the full week, but the sale sheets do not show even that small volume of business to date. The reported sales consisted mainly of 36-inch low count constructions, sateen and twills in bale lots for spot delivery and at prices practically unchanged from quotations of the past week.

The John V. Farwell Company Chicago, says in its weekly review of trade: "Wholsale dry goods business is running about the same as during the corresponding week of last year. House business has shown good improvement during the week. A noticable feature was the number of buyers in from the larger department stores. Collections show a little improvement over previous week."

Cotton goods prices were quoted as follows:

Print cloths, 28-in., 64x64s	7¼
Print cloths, 28-in., 64x60s	7
Print cloths, 27-in., 64x64s	6⅝
Gray gds, 38½-in., 64x64s	10
Gray goods, 39-in., 68x72s	11⅝
Gray goods, 39-in., 80x80s	13¼
Brown sheetings, 3-yard..	14¼
Brown sheetings, 4-yard..	11½
Brown sheetings, stand...	15¼
Ticking, 8-ounce	26
Denims	20
Staple ginghams, 27-in.,...	11½
Kid finished cambrics.....9½a10½	
Dress ginghams 18½a21	
Standard Prints	9½

Chinese Piece Goods Market Smaller

Out of a total of 60 piece goods merchants in and around Canton, 20 are reported to be closing out their business, which was hard hit by the stringent trading conditions preceding and following the October trougle. (Trade Commissioner Osborne S. Watson, Canton, February 9.)

Egyptain Stocks of Cotton Goods.

Stocks of cotton goods in Egyptain bonded warehouses totalled 8,123 bales and cases weighing 2,517,525 kilos (kilo equals 2, 2046 pounds) at the end of February compared with 7,551 bales and cases weighing 2,279,804 kilos on January 31. The increase may be in a measure taken as seasonal, on account of heavy importations in preparation for the Ramadan holidays, present stocks being only slightly larger.

The Yarn Market

Philadelphia, Pa.—Trading in cotcotton yarns continued dull and irregular during the week. Some very low prices on both knitting and weaving yarns were reported by dealers, but in a number of cases it was found that yarns could not be bought on a lower basis than the quoted list. Sales for the week were small and no large contract business was noted, small sales for quick shipment being the rule. The rise in cotton prices on Friday proved a strengthening factor and served to stabilize the markets to some extent, although business did not improve after prices stiffened.

Combed yarn prices on the finer counts were somewhat firmer, but the coarser numbers continued weak and irregular. Mills have held prices generally firm in spite of the absence of trading.

A fair amount of business was placed by the wire insulating trade during the week, buyers being interested in various tingled insulating numbers. These yarns proved about the only description to show any activity during the week, buying in all other quarters continuing on a strictly hand-to-mouth basis. Production has been reduced to some extent and further curtailment is expected.

The price list remained generally unchanged, although prices were regarded as being purely nominal. Published quotations in this market were as follows:

Southern Two-Ply Chain Warps.

2-ply 8s	40	a...	2-ply 26s	47	a...
2-ply 10s	41	a...	2-ply 30s	49	a...
2-ply 16s	43	a...	2-ply 40s	60	a62
2-ply 20s	43½	a...	2-ply 50s	68	a...
2-ply 24s	47	a...			

Southern Two-Ply Skeins.

8s	39	a...	40s	59	a...
10s to 12s	40	a...	40s ex.	62	a63
14s	41	a...	50s	68	a...
16s	42½	a...	60s	74	a76
20s	43	a...	Tinged Carpet—		
24s	46	a...	3 and 4-ply 36		a37
26s	47	a...	White Carpet—		
30s	48	a...	3 and 4-ply 37½	a38½	
36s	57	a...			

Part Waste Insulated Yarn.

6s, 1-ply	36	a...	12s, 2-ply	38	a...
8s, 2, 3 and 4-ply	36½	a...	20s, 2-ply	48	a...
10s, 1-ply and 3-ply	37½	a...	26s, 2-ply	47	a...
			30s, 2-ply	48½	a49

Duck Yarns.

3, 4 and 5-ply			3, 4 and 5-ply—		
8s	39	a...	16s	43	a...
10s	40	a...	20s	44	a...
12s	41	a...			

Southern Single Chain Warps.

10s	39½	a...	24s	46	a...
12s	40	a...	26s	47	a...
14s	41	a...	30s	50	a...
16s	42	a...	40s	60	a...
16s	41½	a...			

Southern Single Skeins.

6s to 8s	38	a...	20s	42½	a...
10s	39	a...	24s	45	a...
12s	40	a...	26s	46	a...
14s	41	a...	20s	48	a...
16s	41½	a...			

Southern Frame Cones.

8s	38	a...	22s	41	a...
10s	38½	a...	24s	42½	a43
12s	39	a...	26s	44	a...
14s	39½	a...	28s	45	a...
16s	40	a...	30s	46	a47
18s	40½	a...	30s tying in	45	a...
20s	41	a...	40s	56½	a57½

Southern Combed Peeler Skeins, Etc.

2-ply 16s	56	a60	2-ply 50s	85	a...
2-ply 20s	56	a62	2-ply 60s	90	a...
2-ply 30s	65	a67	2-ply 70s	95	a1 00
2-ply 36s	68	a75	2-ply 80s	1 05	a1 10
2-ply 40s	75	a80			

Southern Combed Peeler Cones.

10s	50	a...	30s	60	a...
12s	51	a...	32s	62	a...
14s	52	a...	34s	64	a...
16s	52½	a...	36s	65	a...
18s	53	a...	38s	68	a...
20s	53½	a...	40s	70	a...
22s	54	a...	50s	75	a...
24s	54½	a...	60s	85	a...
26s	55	a...	70s	95	a...
28s	57	a...	80s	1 05	a...

Eastern Carded Peeler Thread-Twist Skeins.

20s, 2-ply	52	a...	36s, 2-ply	64	a...
22s, 2-ply	53	a...	40s, 2-ply	66	a...
24s, 2-ply	55	a...	45s, 2-ply	69	a...
30s, 2-ply	58	a...	50s, 2-up	74	a...

Eastern Carded Cones.

10s	47	a...	22s	53	a...
12s	48	a...	26s	55	a...
14s	49	a...	28s	57	a...
20s	52	a...	30s	59	a...

Yarn Spinners' Bulletin.

The bulletin of the Southern Yarn Spinners' Association says:

"The yarn market remains quiet with but little demand. The Easter holidays materially reduced the week's business. Prices show a slight reduction from previous week's level with spinners' asking prices firm at an advance over reported quotations.

"Today's level of prices do not reflect replacement costs based on current cotton quotations by more than 2 cents per pound. Spinners are increasing curtailment, and are not seeking orders at today's level of prices."

Japanese Textile Exports.

Japanese exports of cotton cloth during 1924 totalled 326,547,000 yen, acording to monthly secured by special arrangement from the Japaese Department of Finance. The principal destination of these cloth shipments and the amounts sent were as follows: China, 137,684,000 yen; British India, 47,142,000; Netherlands East Indies, 37,145,000; Hongkong, 19,340,000; Kwantung, 15,708,000. During January, 1925, exports of cotton cloth totalled 29,229,000 yen compared with 20,150,000 for the corresponding month last year. Of the January, 1925 total, 12,738,000 yen worth of goods went to China, 4,557,000 to British India, and 3,604,000 to the Netherlands East Indies. (M. Katsumata, office of commercial attache, Tokyo, March 4.)

Want Department

Wanted

Spindle Plumber. Must be first-class or don't apply. Pay 50 cents per hour. Jno. W. Ridenhour, P. O. Box 3, Albemarle, N. C.

For Sale

100,000 Good Quality Second-hand Warp Bobbins.
2 Fales & Jenks Spinning Frames.
1 Cohoes Single Slasher Headway.
2 No. 5 Sturtevant Cotton Blower Fans.
1 No. 7 Buffalo Cotton Blower Fans.

If interested write for specifications.

C. E. Bailes, Paw Creek, N. C.

For Sale

One pair 60 Spindle 11x5½ Woonsocket Slubbers, with chain driven carriage, late model and in perfect condition. High Shoals Mill, High Shoals, N. C.

For Sale

One 80 H. P. Fire Tube Boiler, excellent condition. Open for inspection. Can be bought for $300. Apply High Shoals Mill, High Shoals, N. C.

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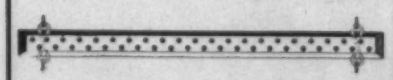

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Wanted

2500 second hand twister spools, 4x6 inches for 7-16 inch spindles. Give price and send sample to Box 697, Charlotte, N. C.

Wanted

Position of Spindle Plumbing and General Overhauling, Carding and Spinning. 20 years experience. Good references. J. M. Melton, R. F. D. 4, Box 166, Albermarle, N. C.

Wanted

Foreman for Jute Cards in rewoven bagging plant. Atlantic Jute Mills, Inc., Norfolk, Va.

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RESULTS

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Interest in Southern Exposition

BOTH in the North and the South interest is increasing in the approaching Southern Exposition, the big co-operative display of industry, commerce and culture by which the Southern tier of States will impress its progress and possibilities upon the remainder of the country. The display will open in Grand Central Palace, New York, on May 11th, running for two weeks, and will occupy three floors of that immense exhibition center. It will be the first time in the history of the Palace that an inaugural of any kind has taken so much space, and the assured success of the initial offering indicates that the Southern Exposition will grow into the biggest of all annually presented in the Metroplis.

In more or less detail all the great industries that have played a part in the wonderful development of the South in the last quarter of a century will find a place in the Southern Exposition. They include the group of huge power companies which have developed natural power through water courses in several States and are selling it cheaply for the benefit of industry; the cotton and cotton goods industry, one of the most important in the world; the minerals, lumber, petroleum and coal that make the South a storehouse of amazing wealth, and displays of the agricultural possibilities of the entire range of States.

With most of these the surface only has been touched. The clays and lighter minerals for the great groups of industries founded upon chemistry are everywhere to be found, and are being worked to a certain extent. They occur, however, in endless profusion and volume, and their complete development offers a most alluring field for the investment of capital. The important objective of the Southern Exposition is to show Northerners how immense the resources of the South really are, and the certainty of return form investments in any o fthese lines.

It is not generally known that the South furnishes the material for the entire aluminum industry of the country in the form of bauxite, which is found in nearly all the States; that there are immense deposits of kaolin for the production of brick and other building materials, and that the variety and range of other Southern clays is sufficient to meet every requirement of the ceramic industry for centuries to come.

Cotton will occupy its usually important place in the Exposition and the display will impress on field as a producer of the finisher textiles. Not so long ago the South merely produced the fibre and distributed it throughout the world. Today there are great plants scattered throughout the South that are competing successfully with New England and Great Britain in the manufacture of high-class cotton textiles and their importance is increasing annually.

Striking features, a most attractive background and an atmosphere wholly of the South will mark the Southern Exposition. Flowers indigenous to the States represented and an abundance of the ghostly gray moss so strongly indentified with all Southern forests will be utilized in abundance along with shrubs, palms, vines and trees. The Music will be mostly of the South, and in this respect no section is richer.

States, cities, civic bodies, ocrporations, institutions, and individuals are isted among the exhibitors who have taken space for the display in the Palace. New Orleans will show its entire port facilities in minuature. Baltimore has a big appropriation to exploit the advantages and attractions of the city; At'anta and other Georgia Cities, through their Chambers of Commerce, will amke their respective bids for popular favor, and other centres of population will exhibit their transportation and education-advantages.

The fur industry of Louisiana is planning a novel showing of that industry; one of the petroleum companies will show the entire process of pumping and refining oil, and many of the sections will make displays of the minerals peculiar to them. These are only a few of the features that promise to make the exhibition stand out among Metropolitan offerings of the kind.

W. G. Sirrine, is president of the Southern Exposition, and has established headquarters at Grand Central Palace, New York.

United Kingdom Export Trade.

Cotton manufactures are being exported in larger volume. During recent weeks; there has been a substantial increase in sales, chiefly of light fabrics, to India, with the dates for delivery of dhooties ranging form May to July. Generally, however, Manchester lacks new cloth business in any large quantity. Cloth buyers are inclined to delay purchases in anticipation of lower levels.

Canadian Textile Industry.

Canada has 54 cotton mills which in 1923 employed 20,316 operatives and produced goods to the value of $86,500,000, acording to a report of the Dominion Bureau of Statistics. In cluded in this output were $27,211,451 worth of unbleached or grey cloth, $6,330,917 of bleached fabrics, $13,860,093 of prints, duck, etc. The mills consumed 100,000,000 pounds of cotton with a value of $28,000,000. (Consul General Halstead, Montreal, March 9.)

Argentina's Cotton Mills.

The development of local cotton manufacturing and the increasing interest shown in the textile industry are indicated by the fact that in 1924, one of the largest Buenos Aires mills was recognied, two others were consolidated with an increase in capital, and new plant for the manufacture of knit goods was established in Buenos Aires.

EMPLOYMENT BUREAU

The fee for joining our employment bureau for three months is $2.00, which will also cover the cost of carrying a small advertisement for one month.

If the applicant is a subscriber to the Southern Textile Bulletin and his subscription is paid up to the date of his joining the employment bureau the above fee is only $1.00.

During the three months' membership we send the applicant notices of all vacancies in the position which he desires and carry small advertisement for one month.

We do not guarantee to place every man who joins our employment bureau, but we do give them the best service of any employment bureau connected with the Southern Textile Industry.

WANT position as overseer spinning, 6 years as overseer spinning and winding hosiery and underwear yarns. Have pleased most exacting customers on hosiery yarns. Good manager of help. Would consider large second hand job. Good references. No. 4425.

WANT position as overseer carding or spinning or both. Would take place as second hand. Special training in carding and spinning, good experience and I. C. S. course. No. 4426.

WANT position as carder and spinner or as spinner. Have had 20 years experience as carder and spinner. Strictly sober and reliable. Can get results. Age 40, married. No. 4427.

WANT position as overseer spinning. Fifteen years on last job. Experienced on both white and colored work. Good references. No. 4428.

WANT position as night superintendent or overseer spinning. Long experience and get results. Good refernecs. No. 4429.

WANT position as overseer carding, 25 years practical experience. Can get quality and quantity production. Good references. No. 4430.

WANT position as superintendent. Long experience as superintendent and overseer and can show excellent results. No. 4431.

WANT position as overseer weaving, would take place as second hand in large room. Experienced on wide and narrow loom, towels, pillow cases tubing, also understand plain weaing. Practical slasher and size man, sober and reliable. Good references. No. 4432.

WANT position as overseer carding and spinning, or both. Long experience in good mills, good references as to character and ability. No. 4423.

WANT position as overseer carding or spinner. Thoroughly reliable and competent man of long experience. Good manager of help. First class refer ences. No. 4434.

WANT position as overseer weaving. Experienced on wide range of goods, can furnish references from some of the best superintendents in the South. No. 4435.

WANT position as overseer carding. Now employed in good mill as carder, but wish to change. Can handle all grades of cotton, low grades and waste. Know card room machinery and can handle help. Married, age 36, good habits, excellent refences. No. 4436.

WANT position as overseer carding or spinning, or both. Thoroughly reliable end experienced man, good references as to character and ability. No. 4437.

WANT position as superintendent of carded yarn mill. Age 35, married, have had 20 years in mill, 8 years as superintendent. Good references, No. 4438.

WANT position as overseer spinning in small mill or second hand in large mill. Good references as to character and ability. No. 4439.

WANT position as overseer cloth room. Long experience on wide variety of goods, have given satisfaction on number of good jobs. Best of references. No. 4440.

WANT position as superintendent or manager, superintendent or would take large weave room or place as textile supply salesman. Excellent references to sow past record. No. 4444.

WANT position as superintendent or overseer weaving. Practical man of long experience on wide variety of goods, fancy and plain, white and colored work. Best of references. No. 4442.

WANT position as carder or spinner. Practical and reliable man of long experience and training. Good references. 4443.

WANT position as overseer carding, spinning or both. Married, sober, no bad habits. Best of references. No. 4441.

WANT position as superintendent to assistant superintendent of yarn mill. Can give good references as to character and ability. No. 4445.

MASTER mechanic with excellent reputation wants to change position on account of ill health in family. Best of references from well known mill men. Will consider only place paying good salary. No. 4446.

WANT position as overseer twisting, or twisting, spooling and winding and reeling. Experienced in these departments and can furnish references as character and ability. Eight years as overseer. No. 4447.

WANT position as overseer weaving. Experienced on wide range of fabrics and can furnish excellent references from present employers. No. 4448.

WANT position as superintendent. Now employed and have fine record of past service. Good references. No. 4448.

WANT position as efficiency expert. Good experience in spinning and weaving mills. Can reduce production costs. No. 4449.

WANT position as master mechanic in small or medium sized mill. Electrical drive preferred. References. No. 4450.

WANT position as superintendent or overseer spinning and twisting. First class references as to ability and character. No. 4452.

WANT position as carder and spinner. Eight years as overseer. Age 35, sober and can give good references. No. 4453.

WANT position as carder, or carder and spinner. Prefer Georgia or the Carolinas. Can handle superintendent's job in small plant. Best of references. No. 4454.

WANT position as carder and spinner. Experienced in both rooms. Now employed. Fine references. No. 4454.

WANT position as overseer spinning. New employed, but wish larger room. Have held present place two years; 8 years as overseer. Age 30, good references. No. 4456.

WANT position as overseer weaving. Eight years on tire fabrics, 4 years on cords. Would consider good place as second hand. References. No. 4457.

WANT position as superintendent. Two years as superintendent. 12 years as overseer carding and spinning. Have taken textile course. Would consider place as overseer. References. No. 4458.

WANT position as superintendent of medium sized yarn mill, or carder and spinner. Long experience on both fine and coarse work. No. 4459.

WANT position as overseer large weave mill, or superintendent smaller mill. Fifteen years as superintendent and overseer. Best of references. No. 4460.

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T. C. Entwistle Co.
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General Electric Co
Westinghouse Electric & Mfg. Co.

Elevators—
Link-Belt Co.

Engineers (Mill)—
——See Architects and Mill Engineers.

Engineers (Ventilating)—
Bahnson Co.
Parks-Cramer Co.

Engines (Steam, Oil, Gas, Pumping)—
Allis-Chalmers Mfg. Co.
Fairbanks, Morse & Co.
Sydnor Pump & Well Co.
——See also Ventilating Apparatus.

Expert Textile Mechanic—
J. D. Hollingsworth.

Extractors—
American Laundry Machine Co.
Tolhurst Machine Works.

Fences (Iron and Wire)—
Cyclone Fence Co.
Page Fence and Wire Products Assn.

Finishers—
Sayles Finishing Plants, Inc.

Finishing Compounds—
Arnold, Hoffman & Co., Inc.
Borne, Scrymser o.
Hart Products Corp.
Seydel-Thomas Co.

Finishing Machinery—
B. F. Perkins & Son, Inc.

Finishing Machinery—
——See Dyeing, Drying, Bleaching and Finishing.

Fire Insurance—
Firemen's Mutual Insurance Co.

Flat Wall Paint—
E. I. du Pont de Nemours & Co., Inc.

Floor Stands—
Wood's T. B. Sons Co.

Fluted Rolls—
Collins Bros. Machine Co.
Fales & Jenks Machine Co.
Woonsocket Machine & Press Co., Inc.
Whitin Machine Works.

Flyer Pressers and Overhaulers—
Southern Spindle & Flyer Co.
Whitin Machine Works.
Woonsocket Machine & Press Co., Inc.

Flyers—
Saco-Lowell Shops.
Southern Spindle & Flyer Co.
Whitin Machine Works.

Frames—
Steel Heddle Mfg. Co.

Friction Clutches—
Wood's T. B. Sons Co.
See Clutches.

Fuses—
Chicago Fuse Mfg. Co.

Gearing (Silent Flexible)—
Link-Belt Co.

Gears—
Dan Gear Co.
Ferguson Gear Co.

Gear Makers—
Dan Gear Co.
Ferguson Gear Co.

Grate Bars—
Thomas Grate Bar Co.

Grab Buckets—
Link-Belt Co.

Greases—
N. Y. & N. J. Lubricant Co.

Grinding and Polishing Machines—
Easton & Burnham Machine Co.
Roy, B. S. & Son Co.

Hangers (Ball and Socket)—
William Sellers & Co., Inc.

Hangers (Shaft)—
Fafnir Bearing Co.
Hyatt Roller Bearing Co.
William Sellers & Co., Inc.
Wood's T. B. & Sons Co.

Hardware Supplies—
Textile Mill Supply Co.

Harness Twine—
Garland Mfg. Co.

Harness and Frames—
——See Heddles and Frames.

Heddles and Frames—
Garland Mfg. Co.
Steel Heddle Mfg. Co.
L. S. Watson Mfg. Co.

Hopper-Feed Hand Stokers—
The J. H. Wiliams Co.

Hosiery Dyeing Machinery—
American Laundry Machinery Co.
Cocker Machinery & Foundry Co.

Humidity and Air Conditioning Aparatus—
American Moistening Co.
The Bahnson Co.
Carrier Engineering Co.
Parks-Cramer Co.

Humidity Controller—
American Moistening Co.
The Bahnson Co.
Carrier Engineering Corp.
Parks-Cramer Co.

Hydro-Extractors—
American Laundry Machinery Co.
Tolhurst Machine Co.

Indigo Deing Machinery—
H. W. Butterworth & Sons Co.
Cocker Machine & Foundry Co.

Insurance—
Firemen's Mutual Insurance Co.
Liberty Mutual Insurance Co.

Knitting Machinery—
Hepworth, John W. &Co.

Knit Goods Finishing Machines—
Kaumagraph Co.
Merrow Machine Co., The.

Knotters—
Barber-Colman Co.
Saco-Lowell Sohps
American Laundry Machinery Co.

Laundry Machinery—
Tolhurst Machine Works.

Landscape Architect—
E. S. Draper.

Leather Packings—
Chicago Belting Co.
Edward R. Ladew Co.
E. F. Houghton & Co.
Graton & Knight Mfg. Co.